BASIC ASSESSMANT REPORT
FOR THE PROPOSED ESTABLISHMENT OF A BORROW PIT NO:6 FOR EXCAVATION OF GRAVEL MATERIAL ON AUSTREY FARM NO. 403 IN REQUIRED FOR THE PROPOSED UPGRADING OFTHE 15KM ROAD 374 FROM GRAVEL TO SURFACE STANDARD WITHIN THE KAGISANO MOLOPO LOCAL MUNICIPALITY IN THE NORTH WEST PROVINCE.

REFRENCE NO: NW30/5/1/1/2/00089BP

DATE :30 October 2020

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mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT

and

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

SUBMITTED FOR ENVIRONMENTAL AUTHORISATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

ESTABLISHMENT OF A BORROW PIT NO.6 FOR EXCAVATION OF GRAVEL MATERIAL ON AUSTREY FARM NO. 403 IN REQUIRED FOR THE PROPOSED UPGRADING OFTHE 15KM ROAD 374 FROM GRAVEL TO SURFACE STANDARD WITHIN THE KAGISANO MOLOPO LOCAL MUNICIPALITY IN THE NORTH WEST PROVINCE.

NAME OF APPLICANT:	Department of Public Works Roads and Transport
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POSTAL ADDRESS:	Private Bag X2037, Mmabatho, 2735
FILE REFERENCE NUMBER SAMRAD	NW30/5/1/1/2/00089BP

1 IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), ("MPRDA") the Minister must grant a prospecting or mining right if among others the mining "will not result in unacceptable pollution, ecological degradation or damage to the environment".

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3) (b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the competent authority and in terms of section 17 (1) (c) the competent authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the competent authority to the submission of applications.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore, please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

1.1 Objective of the basic assessment process

The objective of the basic assessment process is to, through a consultative process─

(a) Determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;

(b) identify the alternatives considered, including the activity, location, and technology alternatives;

(c) describe the need and desirability of the proposed alternatives,

(d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:

(i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and

(ii) the degree to which these impacts—

(aa) can be reversed;

(bb) may cause irreplaceable loss of resources; and

(cc) can be managed, avoided or mitigated;

(e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—

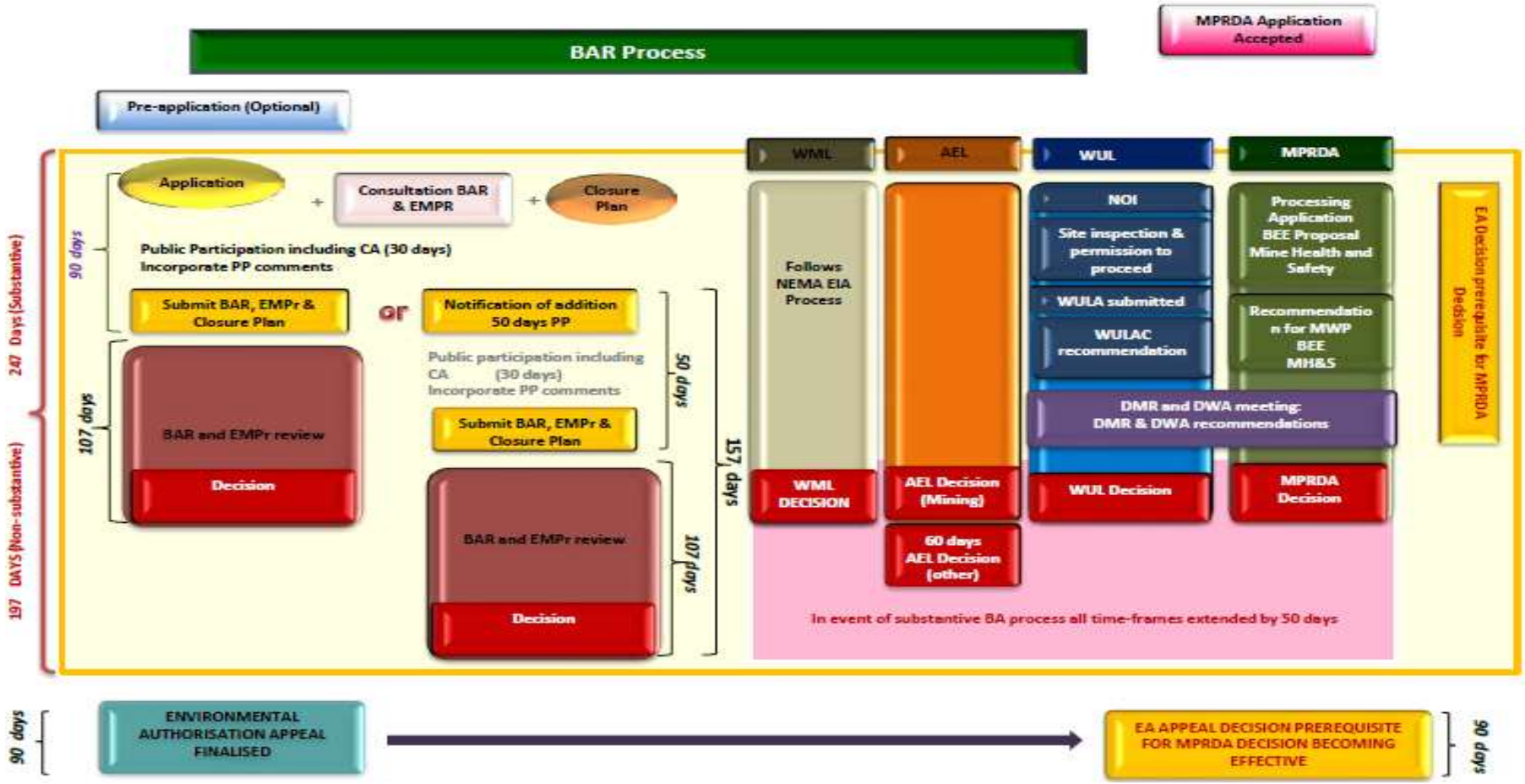
(i) identify and motivate a preferred site, activity and technology alternative;

(ii) identify suitable measures to manage, avoid or mitigate identified impacts; and

(iii) identify residual risks that need to be managed and monitored.

BASIC ASSESSMENT PROCESS ORGANOGRAM

The Basic Assessment process should be undertaken for project activities that are included under Listing Notices 1 and 3. Impacts of these activities are more generally known and can often be mitigated or easily managed. The BA process must follow the procedure as prescribed in Regulations 19 to 20. The following diagram outlines the steps that should be followed in undertaking a BA process.



BA Process Organogram

PART A: SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

CONTACT PERSON AND CORRESPONDENCE ADDRESS	
Contact Person	Lesego Senna
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2 Details of

2.1 Details of the EAP

Lesego Senna

ii) Expertise of EAP.

(1) The qualifications of EAP

Lesego Senna is a qualified Environmental Practitioner who managed and coordinated the EIA study of the project in discussion. Lesego holds the Bachelor Degree: in Natural Science majoring in Microbiology and Biochemistry. She also holds an Honours Degree: Environmental Sciences, Majoring in Environmental Impact Assessment and Earth Sciences – North West University (Potchefstroom Campus).

Lesego holds a certificate in Environmental Law (NQF level 7) with the following courses: Waste Management, Biodiversity Management, Waste Management, Heritage Assessment, Environmental law & Environmental Impact Assessment obtained from the Centre of Environmental Management at Potchefstroom University). She also holds a certificate in GIS and GPS course (NQF level 5) from the Free State University, with the following Modules: Spatial data Structures; Spatial data symbolisation and analysis and interpretation Map design. Lesego is a registered Environmental Scientist registered with the ***South African Council of Natural Scientific Profession SACNASP (Reg.No.400165/17).*** The acquired qualifications and experience demonstrated that we are uniquely qualified to undertake this Environmental Impact Assessment Study.

(2) Summary of EAP's past experience

(In carrying out the Environmental Impact Assessment Procedure)

Lesego compiled the EMPr for obtaining the mining permit for all the roads projects for application of the mining permit as contemplated in Section 27 of the Mineral and Petroleum Resources Development Act, 2002 MPRDA (Act 28 of 2002).

Please refer to the attached details of a Practitioner attached as Appendix A

Table 1: The technical team

Team Member	Qualifications	Project Role
Lesego Senna	Bsc. (Honours) Environmental Sciences	Project Manager
Jennipher Sakaunda	Bsc. (Honours) Environmental Sciences	Environmental Assessment Practitioner
Kgomotso Mohaswa	Bsc. (Honours) Environmental Sciences	Environmental Assessment Practitioner

3) Location of the overall Activity

Farm Name:	Austrey Farm No. 403 IIN
Application area (Ha)	The mining footprint is 4.5 ha
Magisterial district	Kagisano MolopoLocal Municipality within the Dr Ruth Segomotsi Mompati District Municipality
Distance and direction from nearest town	The site is located 9km East of Ganyesa Village
21digit Surveyor General Code for each farm portion	T01N00000000000040300000

2.2 Table 1: Coordinates of the Borrow pit

REFERENCE POINT	LONGTUDE	LATITUDE
A	26°27'12.30"S	24°12'37.57"E
B	26°27'9.99"S	24°12'43.74"E
C	26°27'18.58"S	24°12'47.16"E
D	26°27'20.18"S	24°12'42.45"E

c) Locality map

(Show nearest town, scale not smaller than 1:250000)

Figure 1: Locality map

d) Description of the scope of the proposed overall activity.

Provide a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site.

The Department of Public Works and Roads intends to commence with mining of the gravel material from the borrow pit no 6 located on Austrey Farm No. 403 IN. The gravel material will be used as surface material for the proposed upgrading of the 15km Road 374 from Gravel to Surface Standard within the Kagisano Molopo Local Municipality in North West Province. The total mining area identified for the borrow pit is 4.5 ha, however clearance of vegetation will only confine to 0.4ha footprint to mine the gravel material. The estimated volume of the gravel materials to be mined on borrow pit is about 25 000m^3. No infrastructure will be placed on site; once the gravel material has been mined it will be hauled to the road construction site.

The borrow pit is located on Austrey Farm No. 403 IN is found at the near Austrey village. The Chief of the Village has given consent for the use of the borrow pit. The purpose of the proposed establishment of the borrow-pit is to provide gravel material to be used upgrading of the 15km Road 374 from Gravel to Surface Standard within the Kagisano Molopo Local Municipality. The site of the borrow-pit is close to the 374 road therefore the borrow-pit will be at a strategic position location. The site of the borrow-pit has already been disturbed by the gravel mining activities that took place during the road establishment phase. The contractor will after completion of the road rehabilitation will rehabilitate the borrow pit site.

(I) Listed and specified activities

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY Ha or m²	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
Any activity including the operation of that activity which requires a mining permit in terms of section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including — (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource; or	4.5 ha	**X**	Listing Notice 1.GN R. 327, 07 April 2017. Activity 21

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY Ha or m²	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
[including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)] This project will include the open cast/trenching (earthworks) method of extraction.			
The clearance of an area of 1 hectare or more, but less than 20 hectares, of Indigenous vegetation, except where such clearance of indigenous vegetation is required for-(i) The undertaking of a linear activity. (ii) Maintenance purposes undertaken in accordance with a maintenance management plan.	4.5 ha	**X**	Listing Notice 1. GN R. 327, 07 April 2017 Activity 27

(ii) Description of the activities to be undertaken

(Describe Methodology or technology to be employed, including the type of commodity to be prospected/ mined and for a linear activity, a description of the route of the activity).

The Department of Public Works Roads and Transport is proposing a small-scale mining of a borrow pit for gravel material. The borrow pit contains gravel material that is required as surface material for the proposed upgrading of road 374 from gravel to surface roads. The estimated quantity of material to be mined is approximately 25 000m^3 of gravel material. The project will entail an open cast/surface method of excavation; mined gravel material will be hauled using trucks to the construction site. The proposed project will include the application for a mining permit which triggers a listed activity in terms of the Environmental Impact Assessment (EIA) Regulations, Government Notice Regulations GN R. 327, 07 April 2017 promulgated under the National Environmental Management Act (NEMA) (Act no 107 of 1998).

The surface area will be rehabilitated by establishing the general topography of the surrounding area, ensuring that there are no remnants of the gravel material. Closure and rehabilitation of pits will be undertaken when the activities are completed in that pit. Post-closure monitoring will assist in determining the success of the rehabilitation and also identify whether any additional measures need to be taken to ensure the area is restored to a reasonable and acceptable condition.

Picture 1: The current state of the Borrow pit site

e) Policy and Legislative Context

e) Policy and Legislative Context APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT?
The Constitution of South Africa (No108 of 1996**)**	Section 24 of CSA	The Constitution, which is the cornerstone of the democracy in South Africa, lays the foundation of a more just and equitable society. It guarantees everyone the right to an environment that is not harmful to their health or wellbeing and guarantees the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures. The borrow pit to be established will not compromise rights of the communities by ensuring that the development is undertaken in a manner is not harmful to their health or wellbeing and guarantees the right to have the environment protected. Mitigation measures will be put to protect the health and the wellbeing of the communities.
National Environmental Management Act (Act 107 of 1998), as amended	S24(1) of NEMA S28(1) of NEMA	This Basic Assessment is being undertaken in terms of the National Environmental Management Act (No. 107 of 1998). This is in order to determine any possible impacts on the environment and to propose sufficient mitigation in order to not harm the environment. During the construction and operational phases, the contractor must ensure the development conforms to the principles of NEMA and that measures to identify and assess environmental impacts and to manage these impacts are in place. The final objective is to ensure that the borrow pit

e) Policy and Legislative Context APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT?
		establishment remains environmentally sustainable.
National Mineral and Petroleum Resources Development Act (Act No 28 of 2002)	Section 102	The act makes provision for equitable access to and sustainable development of the nation's mineral and petroleum resources. An application for the mining permit to use the borrow pit has been lodged with the DMR.
National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Mining Activities	The Act provides for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources; the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources; the establishment and functions of a South African National Biodiversity Institute. The potential impact on protected of species and ecosystems that warrant national protection has been assessed, and the management thereof is addressed in this BAR. There are no protected species or ecosystems that might warrant protection onsite.
National Environmental Management Air Quality Act (Act No. 39 of 2004,	Mining Activities	Standards for particulates and dust are used to regulate the concentration of a substance that can be tolerated without any environmental deterioration.

e) Policy and Legislative Context APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT?
Government Gazette No. 27318) (NEMAQA)		
The National Heritage Resources Act (No. 25 of 1999)	Management /monitoring measures	The National Heritage Resources Act legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 hectares (ha). The proposed borrow pit mining operations will not have any impact on Heritage resources, as no resources of significance were identified within the footprint of the proposed development.
National Forests Act (Act 84 of 1998) (NFA)	Section 3 of NFA	The principles of the National Forests Act (Act 84 of 1998) (NFA) pertain to; • The protection of natural forests (except under exceptional circumstances when the Minister determines that the proposed development is preferable in terms of its economic, social or environmental benefits) • The conservation of a minimum area of each woodland type; and • The management of forests to ensure sustainability of resources (wood, soil, biological diversity, etc) No person may cut, disturb, damage or destroy any indigenous living tree in, or destroy any indigenous living tree in, or remove or receive any such tree from, a natural forest except in terms of- (a) A license issued under section 7; or

e) Policy and Legislative Context APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT?
		(b) An exemption from the provisions of this subsection published by the Minister in the Gazette on the advice of the Council. There are protected trees on site, an application with DAFF will be lodged for clearing of indigenous vegetation. Site rehabilitation will be done with indigenous vegetation.
The Occupational Health and Safety Act, 1993 (No 85 of 1993)	Section 8 of OHSA	The Occupational Health and Safety Act, 1993 (No 85 of 1993) provides for the health and safety of persons at work; for the health and safety of persons in connection with the use of plant and machinery at the borrow pits, and the protection of plant and machinery; and the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work. A number of regulations are published under this Act including: • Environmental Regulations for Workplaces (GN R2281 of 1987-10-16) • Regulations for Hazardous Chemical Substances (GN R179 of 1995-08-25) • Asbestos Regulations (GN R109 of 2003-01-17).
The Mine Health and Safety Act, 1996 (No 26 of 1996)	Mining Activities	The Mine Health and Safety Act, 1996 (No 26 of 1996) provides for the protection of health and safety of employees and other persons at mines and serves-

e) Policy and Legislative Context APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT?
		• To promote a culture of health and safety; • To provide for the enforcement of health and safety measurements; • To provide for appropriate systems for employee, employer and state participating in health and safety matters; • To provide effective monitoring systems and inspections, investigations and inquiries to improve health and safety; • To promote training and human resource of development; • To regulate employers' and employees' duties to identify hazards and eliminate, control and minimise the risk to health and safety; To entrench the right to refuse to work in dangerous conditions.
North West Provincial Development Plan	Needs and desirability of the proposed activities	Municipal plans were used to identify relevant socio-economic information and spatial development information with regards to the area relevant to the project site.
Promotion of Access to Information Act (Act No2 of 2000)	Public Participation	The Act aims to give effect to the constitutional right of access to any information held by the State and any information that is held by another person and that is required for the exercise or protection of any right; and to provide for matter connected therewith. Information regarding the proposed establishment of the borrow pit was sent to the I&Aps. BID was

e) Policy and Legislative Context APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT?
		compiled and send to all the identified infected and affected partied. Adverts and Onsite notices were placed in prominent places within the area. Community meeting was convened to inform the community bout the development and to allow them to give their inputs regarding the project.

f) Need and desirability of the proposed activities.

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

Need

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

The proposed upgrade of the road will positively contribute to the social, safety and economic environment of Austrey, Moswana villages and Goodwood the neighbouring communities. The proposed development forms part of the projects and programs identified as priorities at both local and district municipality to develop environmentally sound and safe roads to the community.

The proposed upgrade of the road will contribute to the safety of the pedestrians most especially school children using the road. Pedestrian crossing and pavements will be done on the road and this will keep them safer as they use the road. Dust emissions form the gravel road poses a health and environmental effect to the community, thus upgrading of the road to a surfaced road will eliminate the impact.

Gravel roads are considered to be less safe and are most likely to experience accidents than surfaced roads. Safety in general will be improved, especially during rainy seasons where

accidents percentages tends to be higher due to wet, slippery and degraded roads. Gravel roads also tend to have a degrading effect on the condition of the cars, most especially if one drives regularly on the road. Most community members use public transportation, and some use their cars to get to get to their desired destinations.

The economic status of the community will be elevated as there will be job creation once the project commences. This project will also benefit the Small, Medium and Micro-sided Enterprises (SMMEs) most especially those whom their business is based on construction. Austrey, Moswana and Goodwood villages are considered to be rural with less developed status, the success of this development in the community will create a vibrant, equitable and sustainable rural development which provides employment to the people, thus declining the poverty rates at both district and municipal level.

DESIRABILITY

The mining of gravel material located on Austrey Farm No. 403 IN and the upgrading of the 15km 374 road is a project focused on unlocking economy of scale to the advantages of all stakeholders and the surrounding community; whilst being BBBEE compliant and aligning to the National Development Plan. This will be achieved through sound commercial mining practices and effective management. The project for the establishment of the borrow pit will contribute to the development of environmentally sound and safe roads in South Africa for the benefit of the community and other stakeholders.

Community development and participation:

- Contributing to environmentally sound and safe roads and serving historically disadvantaged communities.
- Finding creative ways of using our resources and skills to contribute to development.

The need for environmentally sound and safe roads has therefore significantly increased as the economic development has diversified. The establishment of the borrow pit and the upgrade of the roads will therefore address economic diversification, employment opportunities and the need for community safety area.

g) Motivation for the overall preferred site, activities and technology alternative.

The proposed borrow pit site located Austrey Farm No. 403 IN in the Kagisano Molopo Local Municipality according to the municipality IDP 2017/2018; the 15km 374 road should be upgraded for community safety. The proposed method is opencast mining which allows easy access of machinery to the site and does not require extensive machinery as other methods,

making it feasible for gravel mining. It reduces the overall costs associated with the mining process.

No alternative sites are selected as the preferred site has adequate and good quality material needed for the road construction. This is the most appropriate site as it is close to the construction site. Mining of the gravel material will boost the economic development through this proposed project which is in Austrey Village. This project will provide employment opportunities, thus stimulating development of the communities. The preferred site has the material to construct durable roads.

The parameters taken into account therefore motivating the site selection is the following:

- Several test pits have been studied and borrow pit has been proved to have the most suitable material for the road upgrade purposes.
- No significant endemic vegetation needs to be cleared during the mining activities.
- No critical biodiversity areas or threatened ecosystems will be negatively impacted.
- The proposed site has adequate space to excavate and protect the topsoil for rehabilitation purposes.
- Noise and dust impacts are not deemed to be significant, seeing that the proposed Borrow Pit is not in close proximity to any residential areas.
- The proposed mining area was defined not to include any wetland or natural riparian ecosystem.
- The mining area is close to the road so there is no need to construct an access road.
- No residual waste as a result of the mining activity will be produced that needs to be treated on site.

The open cast mining of the area (using an excavator and front-end loader) was identified as the most effective method to obtain the desired material. Due to the small size of the activity and the remote location of the mining area the potential impacts on the surrounding environment, associated with open cast mining, is deemed to be of low significance.

h) Full description of the process followed to reach the proposed preferred alternatives within the site.

NB!! – This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.

A soil sample (test pit) was taken from this borrow pit to investigate the quality and adequacy of the gravel material. This borrow pit has the needed material therefore there was no need to assess another alternative. The preferred borrow pit did not have any fatal flaws or limited resources based on the surrounding land use, material present, volume of available material, vegetation sensitivity and surrounding erosions. The chosen borrow pit is therefore preferred site for having the good quality material need for rehabilitation of the road.

i) Details of the development footprint alternatives considered.

With reference to the site plan provided and the location of the individual activities on site, provide details of the alternatives considered with respect to:

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

(a) The property on which or location where it is proposed to undertake the activity;

The site is situated at the beginning of Austrey village on the right-hand side of the road 374. The borrow pit is located on Austrey Farm No. 403 IN is approximately 9 Km East of Ganyesa Village in the North West Province. The borrow pit is approximately 4.5 ha. This project requires compilation of the EMP in order to obtain the Mining Permit from the Department of Mineral Resource.

(b) ***The type of activity to be undertaken;***

No project alternatives were considered for this assessment. The mining permit is required for the sole purpose of excavating gravel material to be used as surface material for the upgrading of road 374 from gravel to surface roads in the Kagosano Molopo Local Municipality.

*(**c) The design or layout of the activity**;*

The gravel material mining does not require any infrastructure such as offices, storage areas. Constructing infrastructure would not be feasible and an unnecessary intrusion and not preferred. TLB, trucks, shovels and excavators will be used to mine the gravel material and the material will further be hauled by trucks to the construction site. No other alternative technologies can be used because of the nature of the mineral.

(d) The technology to be used in the activity;

The preferred mining method (using an excavator, front end loaders and haul trucks) is a proven mining method for this type of mineral and for the small scale of mining. This mining method is also considered to have a low environmental impact if managed correctly. No other mining method will be assessed. These mining methods are standard practice for opencast mining operations. The reasons for the abovementioned method being implemented are driven by the dimension and size of the proposed gravel material mining, and the required amount of gravel material that has to be produced in order to comply with targets. Technology does not have a bearing on the proposed mine.

(e) The operational aspects of the activity; and

Gravel material from the borrow-pit will be transported by trucks to and stockpiled at the road construction areas. The transport by road is therefore the only alternative considered due to the existing haul roads in the area.

(f) The option of not implementing the activity.

The no-go activity has been considered, and assumes that should the proposed activity not proceed then the status quo would remain. This project is in an area of mineral potential and that the proposed road/mining would lead to job creation, contribution to the GDP of the municipality and the province, and be an opportunity to improve the local socio-economic situation. Thus, the no-go option will not be taken forward into the assessment phase.

Department of Public Works and Roads as the custodian of all Provincial roads will not reach its mandate of providing proper road. Locally the Integrated Development Plan of the the Kagisano Molopo Local Municipality states the aim as being that of providing basic services such as roads and developing the local economy. The rehabilitation of these roads will contribute towards the achievement of both of these goals by providing continued jobs for

the road staff, by providing proper and safe roads in the area, boosting South Africa's economy.

Should the proposed gravel material mining operation therefore not be authorised to proceed, it is anticipated that status quo of the road will not improve and the roads will continue have potholes and pose danger to road users. No-Go alternative is therefore not a feasible option in this case as it suggests that the road not be rehabilitated. Accidents will still continue to happen and dust emitted from the road will still persist and pose health hazards to the community.

ii) Details of the Public Participation Process Followed

Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB. The affected parties must be specifically consulted regardless of whether or not they attended public meetings. Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land.

Public participation is an essential and regulatory requirement for an environmental authorisation process, and must be undertaken in terms of Regulations 39 to 44 of the Environmental Impact Assessment (EIA) Regulations GN R.326 (07 April 2017). Public participation is a process that is intended to lead to a joint effort by stakeholders, technical specialists, the authorities and the proponent/developer who work together to produce better decisions than if they had acted independently. The public participation process is designed to provide sufficient and accessible information to Interested and Affected Parties (I&APs) in an objective manner and the following steps were undertaken as part of the public participation process in order to notify interested and affected parties:

Identifying Regulatory Authorities:

The authorities for this project were identified. The authorities contacted with regards to this project include:

- The Department of Mineral Resources (DMR);
- The Department of Water and Sanitation (DWS ;)
- Department of Agriculture, Forestry and Fisheries (DAFF);
- Department: Economic Development Environment Conservation and Tourism

- North West Provincial Heritage Resources Agency (NWPHRA);
- Kagisano Molopo Local Municipality (KMLM).

A copy of the BID that was forwarded to all the authorities listed above is attached in Appendix D.

Identifying all Interested and Affected Parties (I&AP's):

The (I&APs) included the community and local authorities. A process of engagement was followed in order to ensure that all I&APs were given the opportunity to raise concerns regarding the proposed activities. Consultation with I&AP's took place by the following means:

Background Information Document (BID)

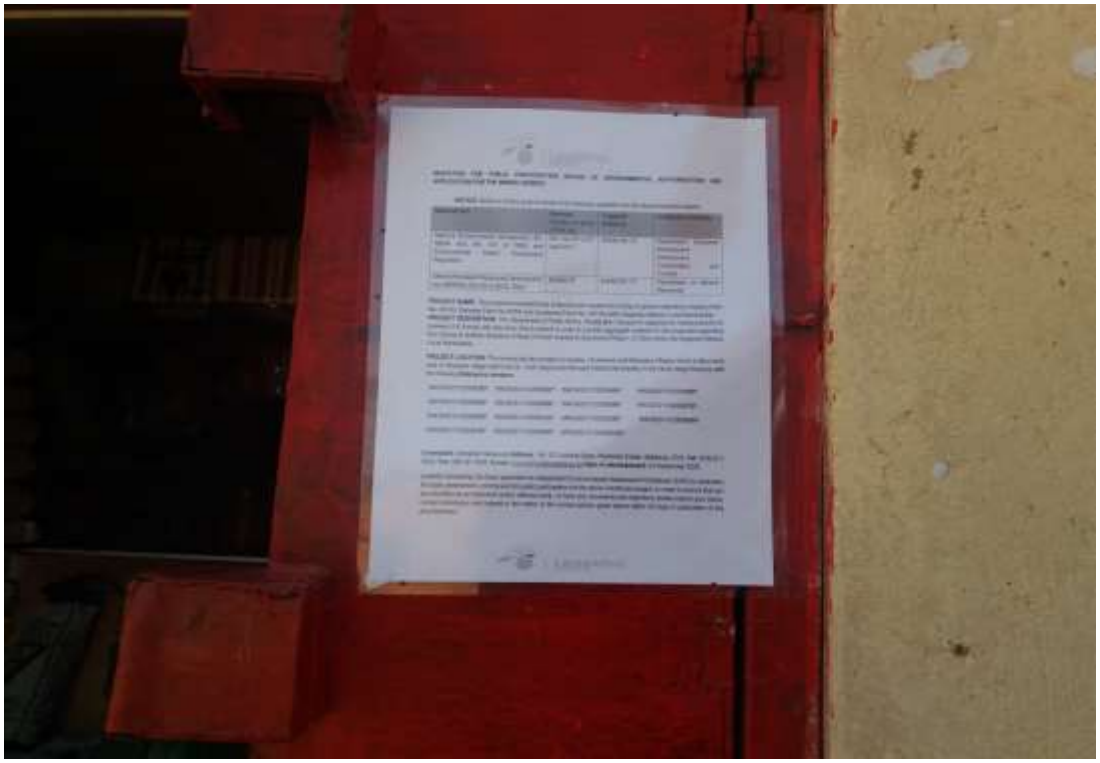
Background Information Documents and Reply forms notifying I&AP's of the application were compiled in English and were distributed to the I&APs via e-mail. All adjacent landowners/occupiers/users were hand-delivered copies of the BID.

The purpose of the Background Information Document was to:

- Invite members of the public to register as I&AP's;
- Identify I&AP's;
- Inform them of the current application;
- Initiate a process of public consultation to record perceptions and issues;

Notices

A2 posters written in English and Setswana were erected and displayed on refer to appendix D for the pictures of the onsite.



Adverts

Advertisements in English in informing people of the proposed activities, the public meeting and requesting readers to register as I&AP's, was placed in two local newspaper. Please refer to Appendix D for the Newspaper Adverts.

Lesekha consulting

INVITATION FOR PUBLIC PARTICIPATION NOTICE OF ENVIRONMENTAL AUTHORISATION AND APPLICATION FOR THE MINING PERMITS

NOTICE: Notice is hereby given in terms of the following legislation for the aforementioned projects

Relevant Act	Relevant Section in terms of the Act	Triggered Activities	Competent authority
National Environmental Management Act, NEMA (Act. No. 107 of 1998) and Environmental Impact Assessment Regulation.	GN. No.327 of 07 April 2017.	Activity No: 27	Department: Economic Development Environment Conservation and Tourism.
Mineral Petroleum Resources Development Act (MPRDA) (Act 28 of 2002), 2002.	Section 27	Activity No: 21	Department of Mineral Resources

PROJECT NAME: The proposed establishment of borrow pits required for mining of gravel material on Austrey Farm No: 403 IN, Ganyesa Farm No:443IN and Goodwood Farm No: 403 IN within Kagisano-Molopo Local Municipality.
PROJECT DESCRIPTION: The Department of Public Works, Roads and Transport is applying for mining permits for fourteen (14) borrow pits (less than 5ha in extent) in order to provide aggregate material for the proposed upgrading from Gravel to Surface Standard of Road 374 from Austrey to Goodwood Phase 1 of 15km within the Kagisano Molopo Local Municipality.

PROJECT LOCATION: The borrow pits are located on Austrey, Goodwood and Moswana Villages which is 9km north east of Ganyesa village within the Dr.. Ruth Segomotsi Mompati District Municipality in the North West Province with the following **Reference numbers:**

NW/30/5/1/1/2/0082BP	NW/30/5/1/1/2/0083BP	NW/30/5/1/1/2/0084BP	NW/30/5/1/1/2/0098BP
NW/30/5/1/1/2/0085BP	NW/30/5/1/1/2/0088BP	NW/30/5/1/1/2/0089BP	NW/30/5/1/1/2/0097BP,
NW/30/5/1/1/2/0090BP	NW/30/5/1/1/2/0091BP	NW/30/5/1/1/2/0092BP	NW/30/5/1/1/2/0096BP
NW/30/5/1/1/2/0093BP	NW/30/5/1/1/2/0094BP	NW/30/5/1/1/2/00895BP	

Consultant: Jennipher Sakaunda **Address:** No. 25 Caroline Close, Rowlands Estate, Mafikeng, 2745. **Tel:** (018) 011 0002; **Fax:** 086 541 6369; **E-mail:** consultant2@lesekha.co.za **Date of advertisement:** 2 September 2020.

Lesekha Consulting has been appointed as independent Environmental Assessment Practitioner (EAP) to undertake the basic assessment, (mining permit) public participation for the above-mentioned project. In order to ensure that you are identified as an interested and/or affected party, or have any comments and objections please submit your name, contact information and interest in the matter to the contact person given above within 30 days of publication of this advertisement.

Community engagement

A Public Participation Meeting was convened inform the community leaders regarding the development and to give the community an opportunity to raise concerns regarding the proposed activities.

Notification regarding the decision from the DMR

All registered I&APs will be notified of the decision made by the DMR on the application.

iii) Summary of issues raised by I&APs

(Complete the table summarising comments and issues raised, and reaction to those responses) Comments have been received from Interested and Affected Parties (I&AP's) at the time of the meeting that was held at the Austrey Village Kgotla (Please refer to the minutes attached in Appendix D)

Interested and Affected Parties	Organisation	Date of comments received	Issue Raised	EAP's response to issues as mandated by the applicant
Interested Parties				
Mr. Lufuno Nevhufumba	Department of Forestry and Fisheries	N/A	No comment received	No comment received
Mr. Thato Mjona	Department of Water and Sanitation	N/A	No comment received	No comment received
Mr Kagiso Makoli	Department: Economic Development Environment Conservation and Tourism	N/A	No comment received	No comment received
Ms Natasha Haggits	North West Provincial Heritage Resources Agency.	N/A	No comment received	No comment received

Interested and Affected Parties	Organisation	Date of comments received	Issue Raised	EAP's response to issues as mandated by the applicant
Ms. Yvonne Oosthuizen	Telkom	N/A	No comment received	No comment received
Mr. Mbulelo Dala	Eskom	N/A	No comment received	No comment received
Comments received for the Affected parties				
Mr. Smith Moseng	Moswana	3 September 2020	In what state should the borrow pit be left in, because the way which the previous contractor left the borrow pits around community is not safe	During rehabilitation the borrow pit the contractor must smoothen the edges of the trench so that the edges are not steep. Top soil must be applied to encourage plants to establish to ensure safety of the animals and the children.
Mr. Tshepang Keogotsitse	Austrey		What must be done if the borrow pit is not rehabilitated?	In order to ensure the contractor rehabilitates the borrow pit area a certain amount of money is paid to the DMR that will be used in case the contractor fails to rehabilitate the borrow pit. If the contractor leaves the borrow pit unrehabilitated the matter can be reported to the Department of Mineral Resources.
Mr. Tshepo Magalana	Good wood		If a certain type of material is not found in all the borrow pit, can the contractor source material elsewhere and how will that affect the royalties.	Yes, the contactor can buy commercially sourced material if the quality required is not available on the identified borrow pits. The contractor will only compensate for the material used.
Councilor Matsietso	Moswana		In our village, members are given permission to occupy land and some are farming on the land farm. What must happen if the borrow pit is identified on my farm in terms of compensation.	The land is still owned by the tribal council since it is communal land even if you are given permission to occupy. As such compensations negotiation for must be between the occupier, the community leaders and the contractor.

Interested and Affected Parties	Organisation	Date of comments received	Issue Raised	EAP's response to issues as mandated by the applicant
Mr. Magabe	Austrey		If the farm is privately owned, how will the owner be compensated	An agreement must be made between the farm owner and the contractor
Councilor Matsietso	Good wood		These three villages have not been benefiting from the projects as all the monies that is paid as compensation is taken by the Chief in Ganyesa	In order to resolve the matter a meeting must be held with the engineers, the community leaders and the contractor
Mr. Magabe	Moswana		What can we use the compensation money for?	There are many ways in which the compensation money can be used to benefit the community. The community leaders must decide in consultation with the community which projects are needed and they are undertaken. They can be a community hall of drilling boreholes.
Mr. Onkemetse Sebogo.	Austrey		How many borrow pit were applied for and what will happen if the construction starts without the approval of the license.	We have applied for 14 borrow pits. It is against the law to mine without a license and is punishable by paying a penalty or jail time.
Tshepo Magalana	Good wood		What procedure must be followed when the road is passing through people yards.	The engineers must see the best way to align the road in terms of community safety and cost. If the engineers see that it is best for the road to pay through the yards Consultation must be done with the home owner to move and if possible, re-aligning the road.
Mr. Tshepang Keogotsitse	Moswana		What must be done if the borrow pit is not rehabilitated?	In order to ensure the contractor rehabilitates the borrow pit area a certain amount of money is paid to the DMR that will be used in case the contractor fails to rehabilitate the borrow pit. If the contractor leaves the borrow pit unrehabilitated the matter can be reported to the Department of Mineral Resources.

Interested and Affected Parties	Organization	Date of comments received	Issue Raised	EAP's response to issues as mandated by the applicant
Abner Mabogola	Bakgalaka Holding (Pyt) Ltd	08 September 2020	I Abner Mabogola residing at Tlakgameng village near Goodwood village, having noted that the Preferential Procurement Regulation, 2017 is outlining BBBEE 8(1) Local Content and 9(1) subcontracting hereby declares interest to be subcontracted on the construction of Austrey to Goodwood road to supply plant.	Your interest has been noted, the letter will be forwarded to the engineers for consideration.
			This company is intending to employ some people from the same village as part of our policy to empower local people.	Noted, the villages were that project is taking place have a lot of poor people, creating employment will help to alleviate lessen poverty in the area.

Interested and Affected Parties	Organisation	Date of comments received	Issue Raised	EAP's response to issues as mandated by the applicant
Keagaletse Edwin Shabeng	Austrey Village	10 September 2020	We as the communities of Goodwood, Moswana and Austrey are still waiting for the results of the borrow pits that was retaken for the second time, it delays the project as it takes six weeks.	Noted, however all the borrow pits that were applied for have been tested and have the material required. The tests reports are available and will be emailed to you.
			We request that the contractor starts to build the road with the two borrow pits that have passed.	The borrow pits must be authorized before the contractor can use them. We are still in the process of applying for the authorisation to use the borrow pits.
			We want all the borrow pits to be fenced and have a lockable gate for safety.	Noted. The contractor must ensure that all the borrow pits are fenced and locked during the night. And a security guard is onsite during the day for the safety of children and animals.
Smith Bomphaletse Mosemeng	Moswane Village	10 September 2020	Security of borrow pits	In order to ensure security and safety at the borrow pits the contractor must fence all the borrow pits lock the during the night. Security guards will be employed during

Interested and Affected Parties	Organisation	Date of comments received	Issue Raised	EAP's response to issues as mandated by the applicant
				the day.
			Compensation and beneficiation from the borrow pits.	The issues of compensation will be discussed with the community leaders, the engineers and the contractor.
Abedinigo Seepapisto Lethogile	Austrey Village	10 September 2020	Security of borrow pits	In order to ensure security and safety at the borrow pits the contractor must fence all the borrow pits lock the during the night. Security guards will be employed during the day.
			Compensation and beneficiation from the borrow pits.	The issues of compensation will be discussed with the community leaders, the engineers and the contractor.
			Terms of the lisence	The lisence has not been issued yet, we are still in the process of applying for the license as such the terms are not known.
			Compensation on the two communities allocated land/stands and ploughing fields.	The people who are affected by the project or who lost their land because of the project must discuss the matter with the engineers and the contactor and reach an agreement.

Interested and Affected Parties	Organisation	Date of comments received	Issue Raised	EAP's response to issues as mandated by the applicant
Tshepang Keogotsitse	Austrey Village	10 September 2020	Security at the borrow pits should not be compromised, since the community has a history of deaths (2) caused by unsecured borrow pits.	In order to ensure security and safety at the borrow pits the contractor must fence all the borrow pits lock the during the night. Security guards will be employed during the day. Parents are encouraged to warn the children not play near the borrow pits.
			Compensation and beneficiation from the borrow pits.	The issues of compensation will be discussed with the community leaders, the engineers and the contractor.
			Compensation on the two communities allocated land/stands and ploughing fields.	The people who are affected by the project or who lost their land because of the project must discuss the matter with the engineers and the contactor and reach an agreement.
Kgalemang Letlhogile	Austrey Village	1 October 2020	The three (03) villages namely Good wood, Moswana and Austrey are the rural villages located on the outskirts of Ganyesa whose residents live in abject poverty and	Noted, the existence of poverty in the communities cannot be denied. As with most rural communities in South Africa most the families live in poverty failing to meet the basic human needs.

Interested and Affected Parties	Organisation	Date of comments received	Issue Raised	EAP's response to issues as mandated by the applicant
			therefore are dependent on their environment to mitigate against their hardships. The majority of the households which comprise the aged women and children look up to their environment for the source of energy such collection of woods, herbal medication and their subsistence farming of small stock of animals and toiling the land. The members of the communities of the three villages are afflicted by many social and economic ills. Poor health conditions, lack of transport, Shortage of	

Interested and Affected Parties	Organisation	Date of comments received	Issue Raised	EAP's response to issues as mandated by the applicant
			food and high levels of unemployment and lack of drinking water for humans and animals are non-exaggeration. Almost every household either has an indigent person who may be suffering from a high blood pressure, Diabetes and now COVID 19. There are no recreational facilities in the three villages and therefore the growing minds resorts to any avenues to entertain themselves. Having laid the above as a way of background I have the following to submit for your consideration: -	

Interested and Affected Parties	Organisation	Date of comments received	Issue Raised	EAP's response to issues as mandated by the applicant
			Environmental impact measures/ plans must be shared with the local communities to mitigate against health hazards to be brought about the digging of the borrow Pits	Noted during the meeting we had with community the impacts and the mitigation measures were discussed. The draft basic assessment Report that outlines the impacts and the mitigation measures was also shared with the community.
			The rehabilitation plans and their budgets for re vegetation must be made available to the affected communities	The draft BAR that was shared the outlined the rehabilitation funds that must be paid; however, the department of Mineral Resources will determine the final amount to be paid.
			The Design of the borrow pits must such that they can serve as water pans for animals during rainy seasons.	Noted, the contractor will be informed. In doing so contractor must rehabilitate the borrow pits in a way that it does not endanger the lives of people and animals.

Interested and Affected Parties	Organisation	Date of comments received	Issue Raised	EAP's response to issues as mandated by the applicant
			The sites for the pits must be clearly marked and fenced properly to mitigate against the loss of human and animal lives.	In order to ensure security and safety at the borrow pits the contractor must fence all the borrow pits lock the during the night. Security guards will be employed during the day.

iv). The Environmental attributes associated with the alternatives.

(The environmental attributes described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects).

Introduction

This section provides a general description of the environment in which the proposed borrow pit mining operation is proposed. The purpose of this section is to provide a perspective of the local environment within which the proposed mining operation will be located, with a view to identify sensitive issues/areas, such as wetlands or other ecological aspects, which need to be considered when conducting the impact assessment and designing the various components of the project

(1) Baseline Environment

(a) Type of environment affected by the proposed activity.

(Its current geographical, physical, biological, socio- economic and cultural character).

Description of Specific Environmental Features and Infrastructure on The Site

The site of the borrow pit is located along the long 374 Road at the near Austrey Village and an access road connects the site to the 374 road. There is no infrastructure on site. The proposed site is predominantly covered by grassland with scattered trees.

The Kagisano-Molopo Local Municipality is a Category B municipality situated within the Dr Ruth Segomotsi Mompati District in the North West Province. It borders on the Kgalagadi District of the Republic of Botswana to the north, Greater Taung to the south, the Northern Cape Province to the south-west, Naledi to the south-east, and Ratlou to the east. It is the largest of the five municipalities that make up the district, accounting for just over half of its geographical area. It was created during the local government elections of 18 May 2011 by merging the Kagisano-Molopo Municipalities.

3.1 Climate

Kagisano-Molopo Local Municipality normally receives about 318mm of rain per year, with most rainfall occurring mainly during summer. The lowest rainfall (0mm) in June and the highest (65mm) in usually received in January. The monthly distribution of average daily

maximum temperatures (midday) for Kagisano-Molopo Local Municipality range from 19.8°C in June to 33.5°C in January. The region is the coldest during July when the average temperature drops to 0.1°C on during the night. Figure 3 and Figure 4 is an indication of the rainfall and temperature conditions in Kagisano-Molopo Local Municipality.

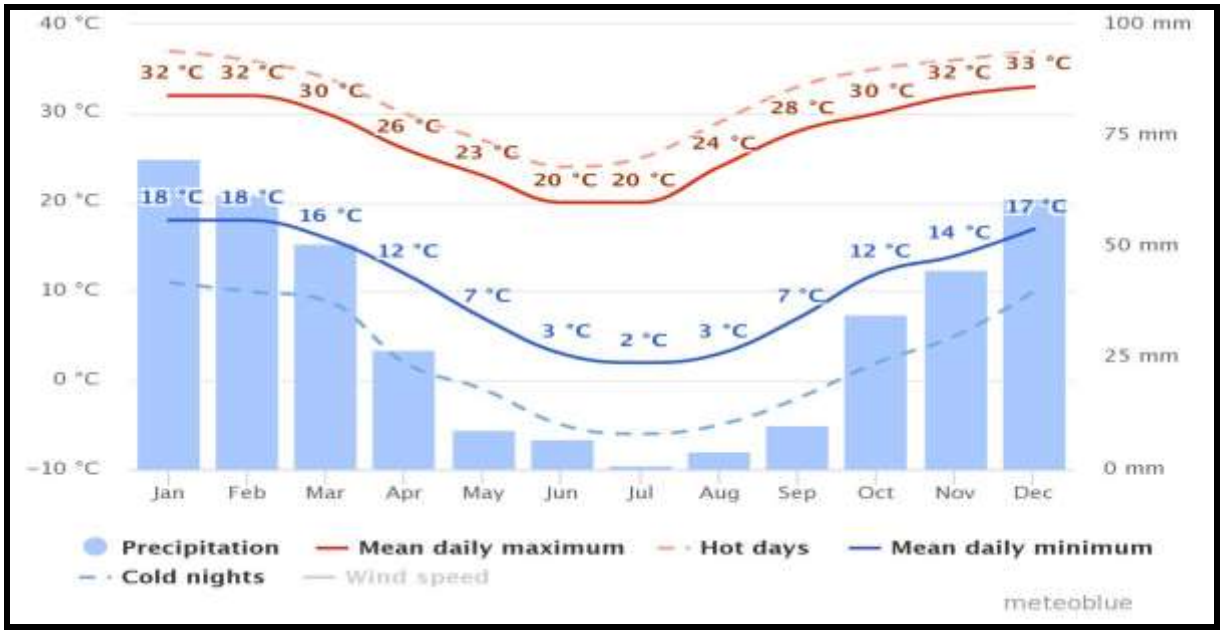


Figure 3: Temperatures for Ganyesa

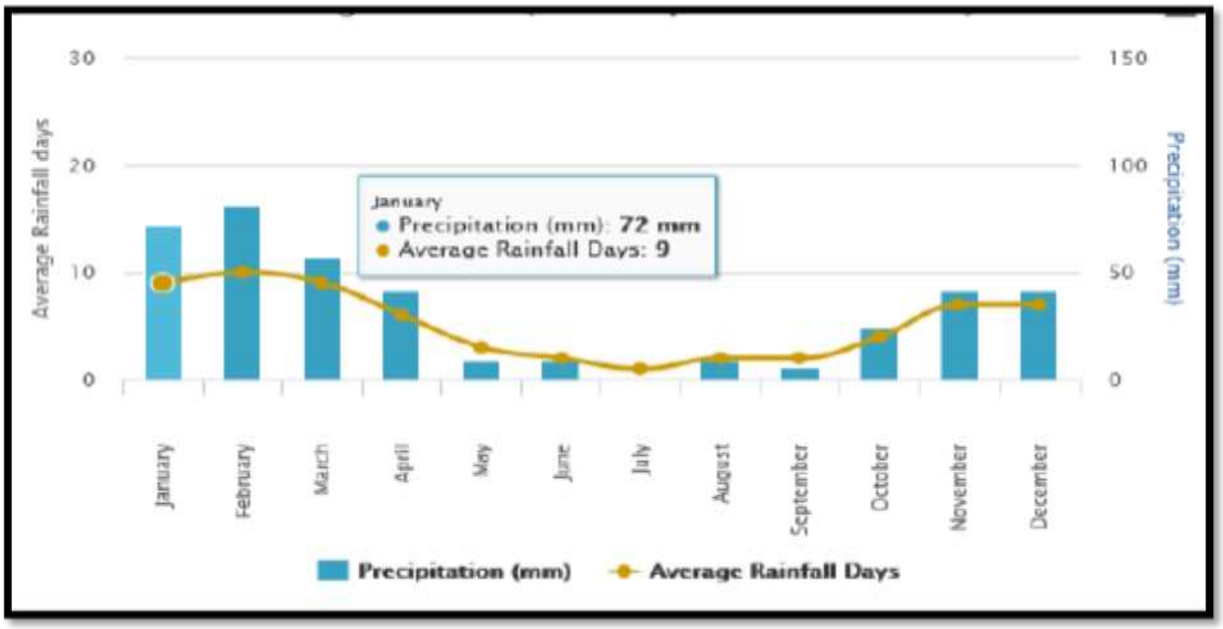


Figure 4: Rainfall for Ganyesa

Implication of development:

- The climatic character of the region will not have a significant impact on the development potential of the study area.
- Should the construction phase be scheduled for the summer months, frequent rain could cause very wet conditions, which makes construction and environmental rehabilitation works extremely difficult;
- Such wet conditions often cause delays to building projects.

3.2 Wind direction

The wind rose for Ganyesa shows how many hours per year the wind blows from the indicated direction.

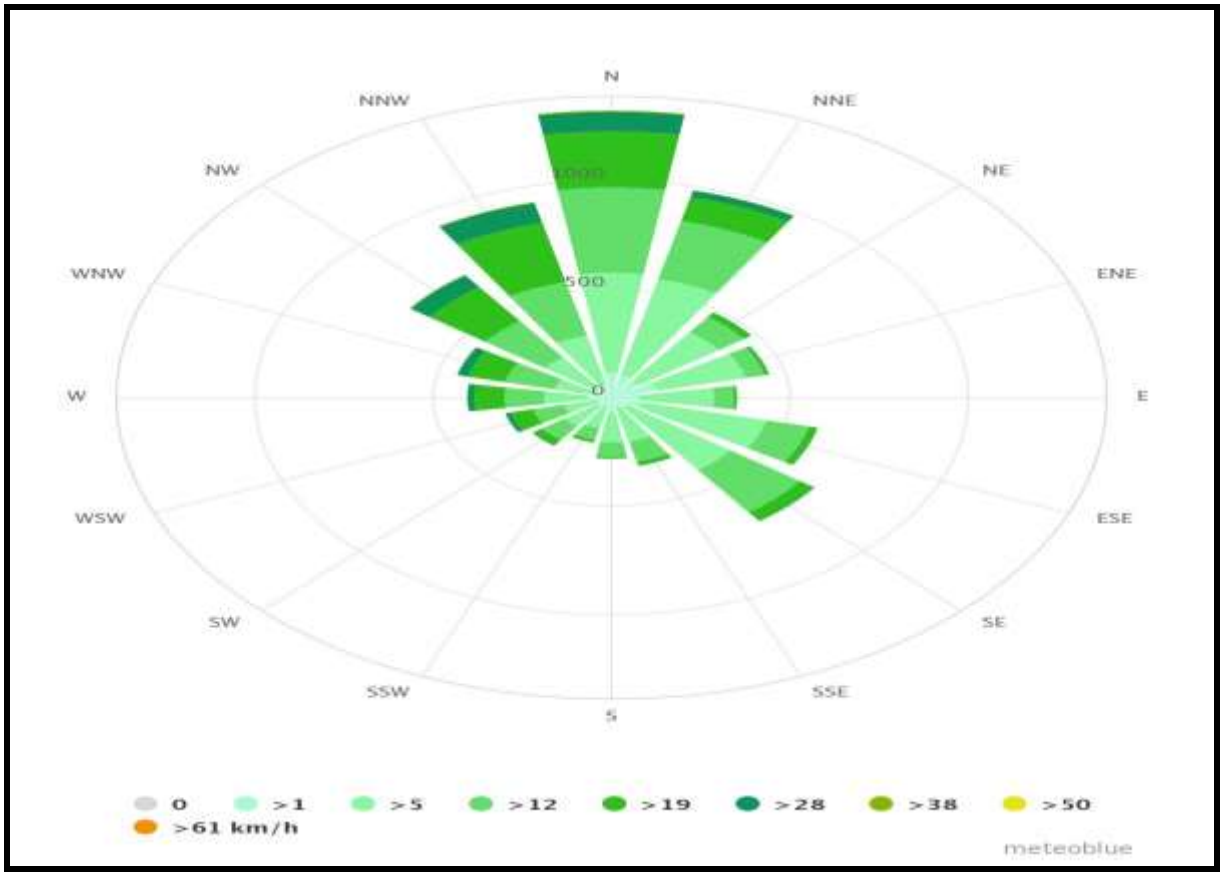


Figure 5: Wind rose

3.4 Geology of the site

The proposed site is underlain by silica clastic rocks. The background of rock type is a very simply, if a siliciclastic particle is not quartz or feldspar it is classified a lithic fragment. Lithic is a rock and all mechanically weathered pieces of another rock, or non-feldspar minerals weathered from a rock, are included here. Frequently they are small, dark in color, and difficult or impossible to specifically identify in hand specimen. The exception to this is conglomerates and breccias. Lithic fragments are especially abundant in volcanic arc systems, but are common in most collision mountain buildings. Clastic rocks form from weathering products that do not dissolve in water - clasts. It includes conglomerates, sandstones, and shales.

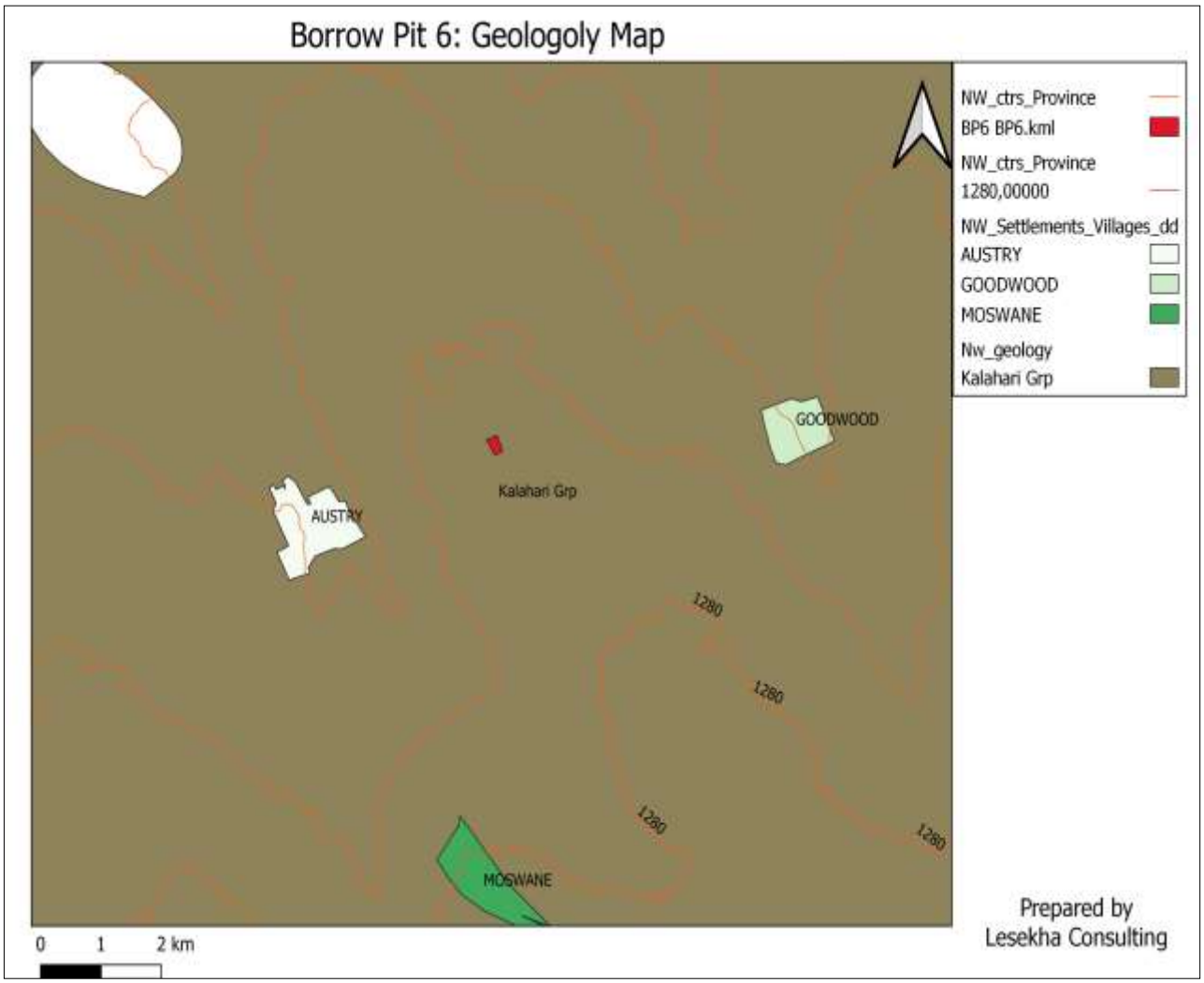


Figure 7: Geology map

3.5 Soils of the site

Red and yellow – sandy well drained is the soil underlain locally to regional area of Kagisang-Molopo Local municipality these soils are found higher in the landscape associated with the Gently Undulating Rises unit and the Undulating Low Hills Unit. The water erosion hazard is high on this soil type because of the presence of non-wetting sands, slope and slope length. The wind erosion hazard is also high because on the structure less sandy topsoil. Poor management of these soils will decrease productivity locally but also have off-site impacts on other soils located in other units. Particular issues of concern include water run-off leading to erosion and flooding of soil positioned lower in the landscape.

Cultivation is not recommended as these soils are prone to extreme wind erosion. The friable nature of the surface soils makes them well suited to direct drilling, although rolling may be required to provide a firm seedbed and conserve moisture and improve germination and establishment rates. These soils are easy to work and offer very low draft resistance to machinery. There are no compaction problems. The surface soil remains soft after wetting-drying cycles and is non-sticky when wet. These soils are prone to erosion and techniques that reduce the need for soil disturbances such as direct drilling, are best suite

These soils are best suited to plants that provide vegetation cover throughout the whole year as wind and water erosion can be severe. The re-establishment of native vegetation for stock and crop wind protection is recommended particularly on lighter soils. Although soils are capable of being cropped with wheat or oats utilizing stubble retention and minimum tillage or, preferably direct drilling, cropping is not recommended due to the high risk of crop failure and soil erosion. Currently, these soils support many low grade clover stands with annual grasses due to the high cost involved in establishment and maintaining high pasture production. The incorporation of clay into these light sandy surface soils has increased the pasture establishment options for many landowners and reduced the non-wetting nature of the surface soils.

Implications for Re-vegetation

Re-vegetation activities should be undertaken in the autumn to capitalise on the moisture available. Spring plantings are prone to the summer dry periods and may not enable adequate establishment. Most soils of this nature are free draining and water-logging will not

be a problem. Areas with shallow sands over clay will be affected more often by water logging. Local species suitable to the extreme conditions will offer the best chances of survival.

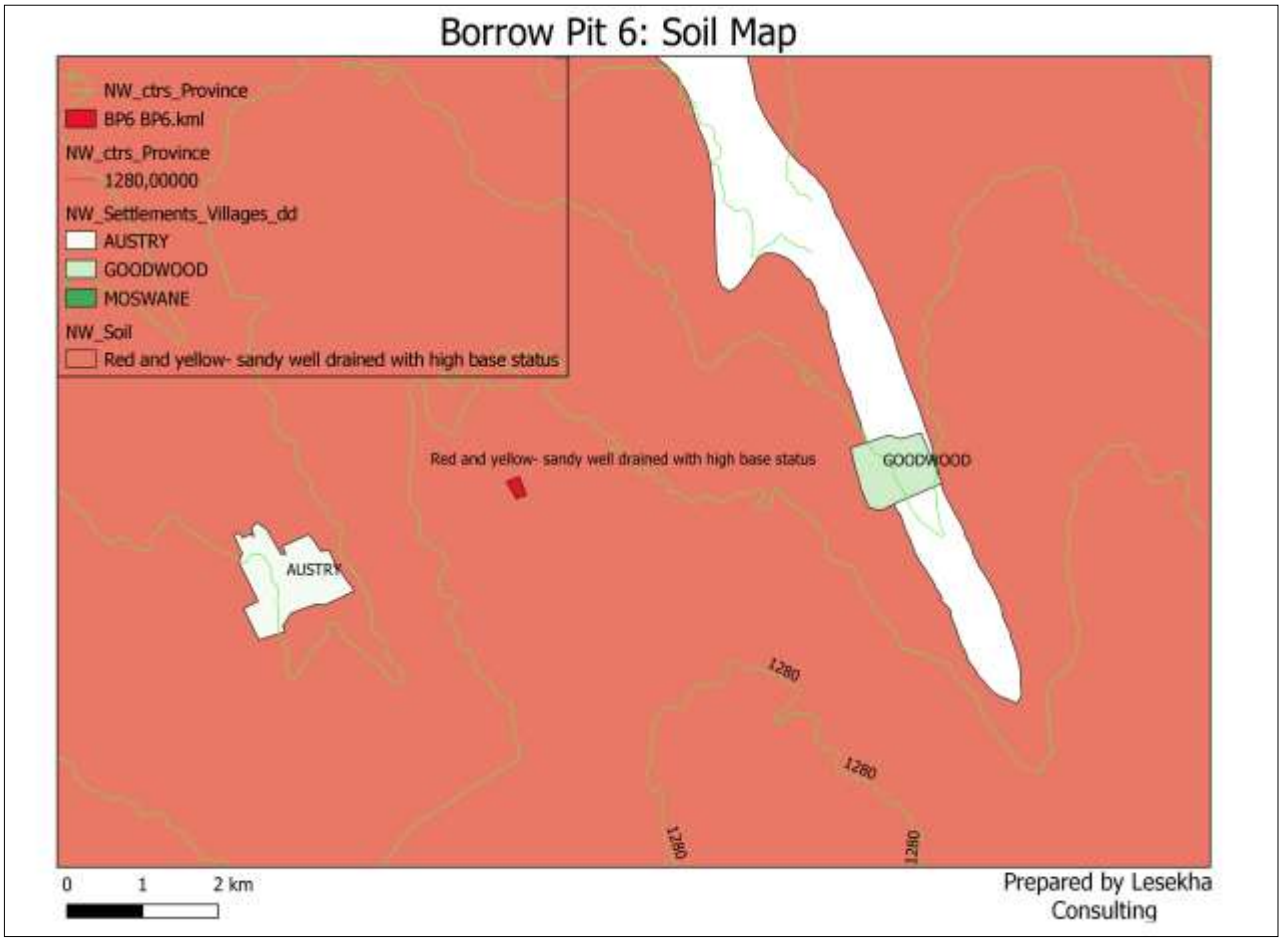


Figure 8: soil Map

3.6 Topography of the site

The topography of the area refers to the slope and level of the land, whether the land is flat and plain, or in sloping. Topography is a measurement of elevation and slope is the percentage change in that elevation over a certain distance. Topography is measured by to connecting points of same elevation. These points are known as the topographic contours. Locally the topography area is plain and wide open the elevation vary from the south which is 1263m to the north direction of the site elevation 1262. There is rehabilitated borrow pit on the North-West from the site elevated 1258m-1259m. Indicating that the surrounding

elevation of the site vary to the old borrow pit site. Elevation of the local area and site is depicted below:

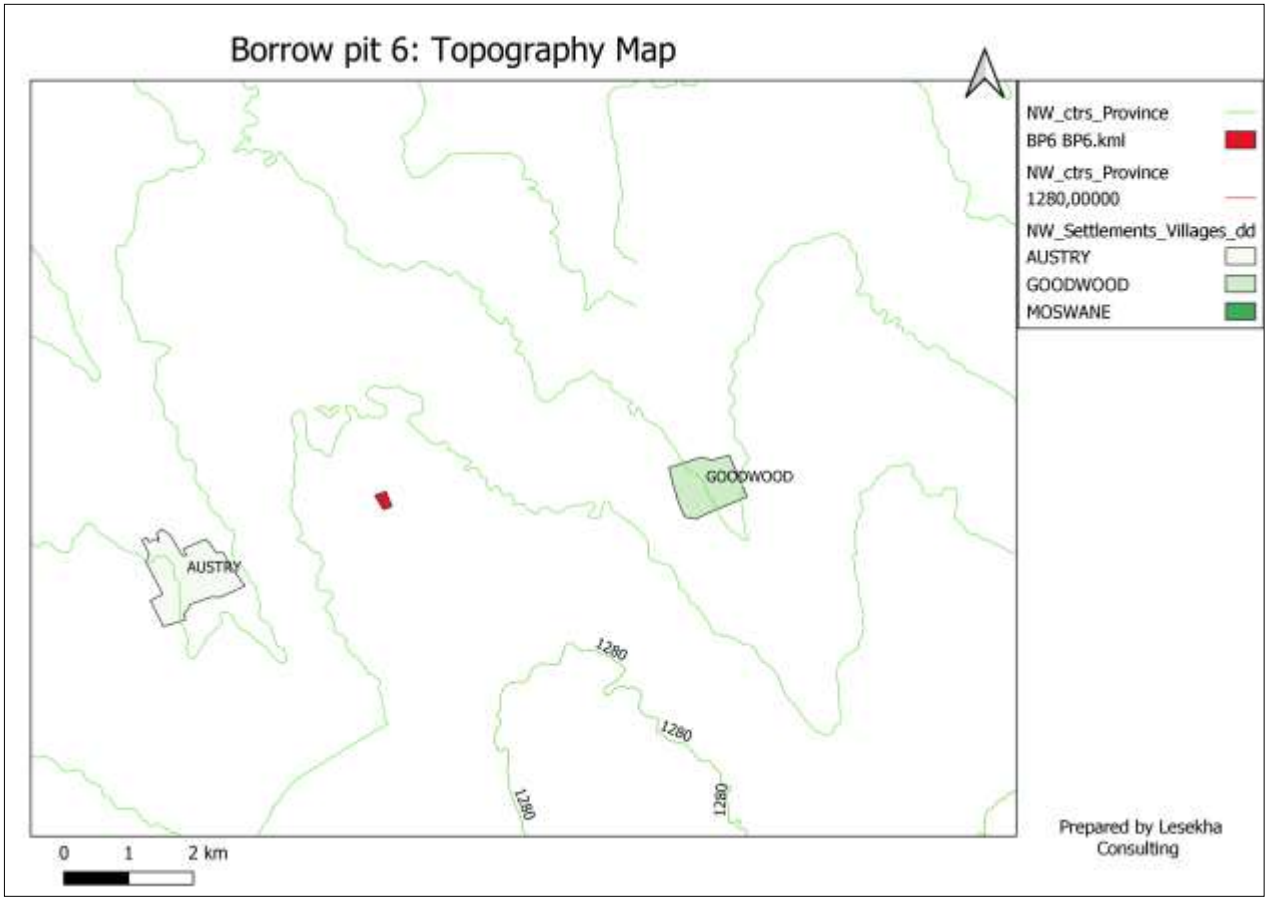


Figure 10: Topography map

3.7 Vegetation

Ecology (flora, fauna and wetlands) the site falls within the vegetation type Mafikeng Bushveld (Mucina and Rutherford, 2006). This vegetation type is characterised by tree species such as Terminalia sericea, Acacia luederitzii and Acacia arioloba. Shrub species occur in the area such as Acacia karoo, A. hebeclada and A. mellifera. Grass layers are well developed. A few Acacia arioloba trees ecies were identified during the site visit; some will be disturbed by the development. This vegetation unit is classified as 'Vulnerable', since some of the area has been transformed, or is threatened by transformation.

Based on the review of available and observations noted during the site visit, beside the pockets of natural vegetation (acacia trees and grass), no natural habitats were noted to have remained on the site as the site has been disturbed by grazing activities.

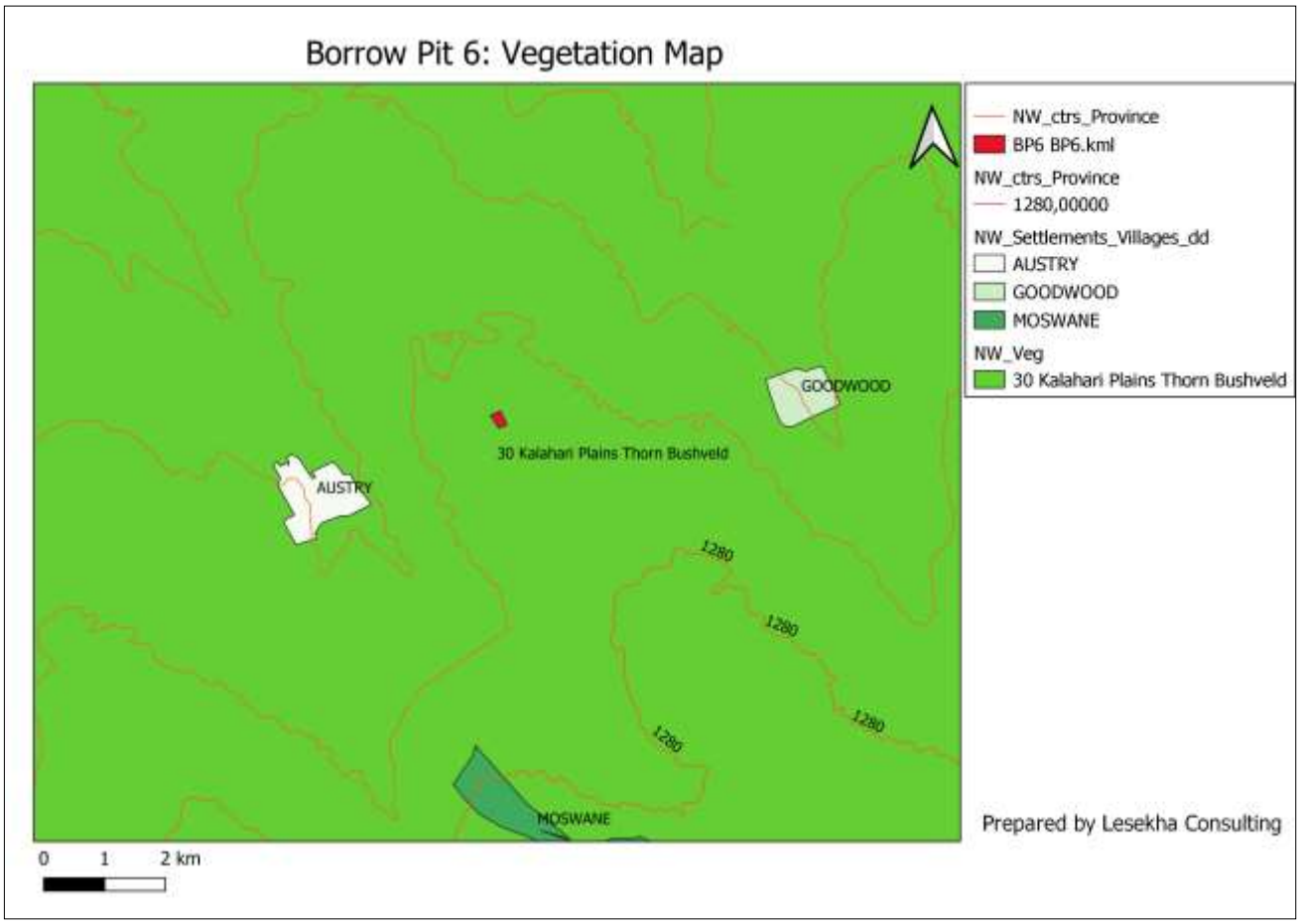


Figure 11: Vegetation map

3.8 Socio Economic Environment

3.8 .1Population

As per the Community Survey 2016, the total population of Kagisano-Molopo Local municipality is 105 789 Population distribution of Kagisano-Molopo is as follows; those aged 0–14 years (36%), followed by those aged 15–34 years (35%). Those aged 35–64 years account for 23%, and those aged 65 years and above account for 6% of the entire municipal population. Of the population, 52% are female and 48% are male.

Table 2: Population by race

Population Group	Population
Black	97 769
Coloured	911
Indian or Asian	284
White	3739
Total	102 7

Source: Community Survey 2016

3. Household Comparisons

The Municipality has seen a slight decrease of population and household statistics compared to 2011 census.

Table 3: Household Statistics

Local Municipality	**Census 2011**		**Community Survey 2016**	
	Person	**Households**	**Persons**	**Household**
Kagisano- Molopo LM	105,789	28,531	102 703	28 274

3.8.3 Unemployment

The Kagisano-Molopo local municipality is a local municipality in the North West province of South Africa with an estimated population of 105 789 people which constitutes 22,8% of the entire district's population Youth employment rate at Kagisano Local Municipality stands at about 30% and the youth unemployment rate is about 39.08%. Unemployment within Dr. Ruth S Mompati district municipality is high and there are attributing factors. The overall unemployment rate for the Dr. Ruth S Mompati district municipality for 2009 for male is (27.8%) and female (31.6%). The table below depicts the status of the municipality in the District and Province in terms of unemployment rate comparatively from Census 2001 and 2011.

Table 4: The unemployment rate

	Census 2001	Census 2011
	Unemployment Rate	Unemployment Rate
North West Province	43%	31%
Dr Ruth Segomotsi Mompati	49%	36%
Kagisano/Molopo	39%	30%

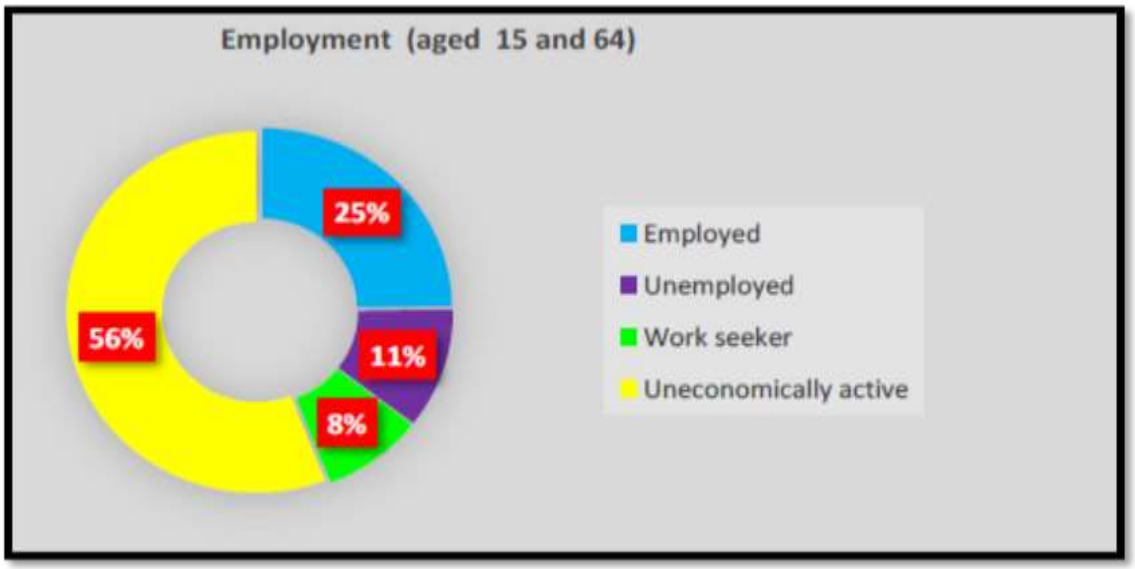


Figure 12: Employment rate in the KMLM

3.8.4 Level of education

According to the Census 2011 data obtained for the Kagisano Local Municipality, the Municipality has about 28,6% of population above 20 years that has no formal Sports facilities ing. Only 4.5% of the people age above 20 years have received higher education whereas only 14% of the population aged 20 years and above have done matric.

3.8.5 Access to Water

3 % of households have access to piped (tap) water inside the dwelling/house.16 % have access of water inside the yard. 27% access tap water on a community stand that is less than 200m from their yards, 13% have access of water from boreholes in the yard. 6% of household access water from neighbours.

3.8.6 Toilet Facilities

The table below shows the percentages of the types of toilets used in the Kagisano-Molopo Local Municipality.

Table 4: Access to toilets

Types	None	Flush toilet (with septic tank)	Chemical toilet	Flush toilet connected to a public sewerage system	Pit toilet with ventilation (VIP)	Pit toilet without ventilation	Other	Total
	8%	4%	4%	4%	64%	15%	1%	100%

3.8.7 Access to Electricity

Community survey 2016 has shown that the municipality has 86% of households with access to electricity, and only 14% of the households do not have access to electricity. Te Sports facility will be connected to the Eskom Grid.

3.8.8 Economic Development

The Kagisano-Molopo Local Municipality is a dominantly comprised of rural municipality and is economically dependent on Agricultural farming and formal employment in the public (government) and private sector. The Kagisano/Molopo is the highest concentrated local municipality in the district and has about 22.8 % of the district population. Kagisano-Molopo is an agriculture-based municipality, farming both livestock and crops. It boasts production of potatoes, peanuts, cabbage, carrots and onions amongst crops, and breeds cattle, sheep, goats and wild game amongst livestock. Most of the crops produced are exported to neighboring provinces, such as the Northern Cape and neighboring countries such as Namibia and Botswana, as raw materials for consumption and/or further processing. Thus, a large portion of income is derived from the agricultural sector which is mainly owned by individual farmers/corporations. The majority of the inhabitants are employed in the agricultural sector. There is also subsistence farming by villagers who at times sell their produce to generate household income. There are also a few government sector departments (sub-district offices) that also contribute to the employment of the municipal

population. The retail trade industry also contributes, though not significantly so, as there are a few major retailers in the area, namely Shoprite and Cash Build.

3.8.9 Description of the current land uses.

The land use comprises of disturbed areas with the majority having been disturbed by the previous mining activities. The farm is currently being used for both cattle grazing. There are also residential areas on the Northern side of the Farm. The mining activities for gravel material will occur close to the road where the landscape, soils and the capability of the land has been significantly altered; the natural grasslands and biodiversity have all been altered by these activities.

(c) Description of specific environmental features and infrastructure on the site.

The Borrow pit is located adjacent to the Austrey Village. The proposed area to be mined is grassland, there are no any natural feature e.g. stream, river or wetland, no archaeological aspect like graves, artefacts that will be tempered with. The area where the borrow pit will be excavated is not a pristine environment.

(d) Environmental and current land use map.

Refer to the Map on figure 1 showing the location of the borrow pit

v) Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts. Including the degree to which these impacts:

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of the impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed or mitigated).

Table 4: shows environmental impacts associated with the proposed facility

	Impact pathway	Nature of potential impact/risk	Extent	Duration	Consequence	Probability	Significance of impact/ risk	Reversibility of impact	Irreplaceability of receiving environment/	Can impact be avoided?	Can impact be managed or mitigated?	Potential mitigation measures	Significance of residual risk/	Ranking of impact/ risk
Fauna and Flora	Clearing of vegetation	Habitat and loss of species.	site	Long-term	Substantial	Very likely	Moderate	No	Moderate	No	Yes	Rehabilitation Programme and ensuring workers are aware on the site boundary.	low	4
		Exposed soils susceptible to Erosion.	site	Medium term	Moderate	Likely	Low	Yes	Low	No	Yes	Erosion Management Plan (EMPr)	Very low	5
	Disturbance of soils	Alien plant invasions in disturbed areas.	site	Long-term	Severe	Very likely	Moderate	Yes (rehab after Decommissioning)	Low	No	Yes	Removal of alien plant to reduce encroachment.	Low	4
Geohydrology	Spills, pollution	Contamination of groundwater	site	Long-term	Substantial	Likely	Moderate	No	Low	Yes	Yes	Minimal spillage will be from machines leakages no filing of fuel to be done onsite.	Very low	5
	Water runoff	Altered hydrological regimes and water quality	Local	Long-term	Substantial	unlikely	Moderate	Yes (rehab after decommissioning	Moderate	No	Yes	Implementation of storm water management measures	Low	4

	Impact pathway	Nature of potential impact/risk	Extent	Duration	Consequence	Probability	Significance of impact/ risk	Reversibility of impact	Irreplaceability of receiving environment/	Can impact be avoided?	Can impact be managed or mitigated?	Potential mitigation measures	Significance of residual risk/	Ranking of impact/ risk
								)						
	Increase in use of water	Impact on available groundwater resources and water levels in the area.	Local	Short term	Medium term	Unlikely	low	No	Moderate	Yes	Yes	The gravel material mining requires no water, minimal water will only be used for drinking purpose.	Very low	5
Social	Labour required for project development	Employment opportunities	Local	Long-term	Moderate	Likely	Moderate	No	Low	No	Yes	Locals first' employment policy considering the skills are adequate	Medium (positive	3 (positive)
	Traffic operations	Increase in traffic and pressure on the road network	Local/regional	Long-term	low	Likely	Moderate	No	Low	No	No	Transportation of gravel material kept to normal operational hours.	low	4
	Injuries to Animals	Animals (cattle goats and sheep) are at risk of injury	Local/region	Long-term	low	Likely	Moderate	No	Low	No	No	The site for mining should be fenced off and the gate be closed after working hours.	low	4

	Impact pathway	Nature of potential impact/risk	Extent	Duration	Consequence	Probability	Significance of impact/ risk	Reversibility of impact	Irreplaceability of receiving environment/	Can impact be avoided?	Can impact be managed or mitigated?	Potential mitigation measures	Significance of residual risk/	Ranking of impact/ risk
		due to the mining activities	al											
	Health and safety of workers	High risk work environment causing injury and/or death	site	Long-term	Moderate	Unlikely	Moderate	No	High	Yes	Yes	Proper training, Health and Safety precautions in place and routing maintenance of equipment as per the EMPr	low	4
Air Quality	Air Quality disturbance due to emissions from operations and trucks	Decrease in the quality of the air	Local	Long-term	Substantial	likely	Low	No	Low	No	Yes	Keep within regulated acceptable emissions standards& consider cumulative impacts	Very low	4
	Dust generation	Increase in road traffic on dirt roads causing dust generation	site	Short-term	Moderate	Very likely	Moderate	No	low	No	Yes	Use of grey water for dust spraying and wetting, proper grading of roads and keeping traffic to a reasonable level	low	4

	Impact pathway	Nature of potential impact/risk	Extent	Duration	Consequence	Probability	Significance of impact/ risk	Reversibility of impact	Irreplaceability of receiving environment/	Can impact be avoided?	Can impact be managed or mitigated?	Potential mitigation measures	Significance of residual risk/	Ranking of impact/ risk
economic	Project Expenditure (incl. direct capital investment,	Investment and growth in local economy	Regional	Long term	Medium (positive)	Very likely	Moderate (positive)	Yes	Moderate	No	Yes	None	Moderate (positive)	3 (positive)
	Development of the proposed project	Decreased property values	Local	Long-term	Slight	Unlikely	Low	Yes	High	Yes	Yes	The nearest community is approximately 1km away from the mining site. No property value will be encountered.	Very low	5
Noise	Noise disturbance during operation	Disruption to surroundings due to noise levels	Local	Long-term	Moderate	Unlikely	Moderate	No	High	Yes	Yes	The noise expected from the machinery to be utilised onsite will not be a nuisance to the labourers and will be within the required noise ambient. Conversely ear plugs will be provided to the labourers to mitigate the noise impact. The silencer will also be installed on the machines to be used.	Low	4
Heritage	Clearing the site	Destruction of archaeology	site	Permanent	Slight	Unlikely	Low	No	low	No	Yes	There were no graves that were identified, should any unmarked graves be unearthed during the mining process they must be reported to the heritage	Very Low	5

	Impact pathway	Nature of potential impact/risk	Extent	Duration	Consequence	Probability	Significance of impact/ risk	Reversibility of impact	Irreplaceability of receiving environment/	Can impact be avoided?	Can impact be managed or mitigated?	Potential mitigation measures	Significance of residual risk/	Ranking of impact/ risk
												authorities and may require inspection by an archaeologist as appropriate.		

vi) Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;

(Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process were determined in order to decide the extent to which the initial site layout needs revision).

The assessment methodology that will be utilised in determining the significance of the potential Construction impacts of the existing and planned activities, on the biophysical and socio-economic environment is explained in the following sections. The methodology is broadly consistent to that described in Integrated Environmental Management Series. In order to assess the significance as objectively as possible, the criteria as per the 1998 Department of Environmental affairs and Tourism (DEAT) guidelines and the 2002 DEAT Information Series document will be used as the basis for the assessment methodology adopted by Lesekha Environmental Consulting.

Assessment of Potential Impacts

The assessment of impact significance is based on the following conventions:

Nature of Impact - this review the type of effect that a proposed activity will have on the environment and should include “what will be affected and how?”

Spatial Extent - this should indicate whether the impact will be:

- Site specific;
- Local (<2 km from site);
- Regional (within 30 km of site); or
- National.

Duration - The timeframe during which (lifetime of) the impact will be experienced:

- Temporary (less than 1 year);
- Short term (1 to 6 years);
- Medium term (6 to 15 years);
- Long term (the impact will cease after the operational life of the activity); or

Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient).

Intensity - it should be established whether the impact is destructive or innocuous and should be

Described as either:

- High (severe alteration of natural systems, patterns or processes such that they temporarily or permanently cease);
- Medium (notable alteration of natural systems, patterns or processes; where the environment continues to function but in a modified manner); or
- Low (negligible or no alteration of natural systems, patterns or processes); can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision making.

Probability - this considers the likelihood of the impact occurring and should be described as:

- Improbable (little or no chance of occurring);
- Probable (<50% chance of occurring);
- Highly probable (50 – 90% chance of occurring); or
- Definite (>90% chance of occurring).

Reversibility - this considers the degree to which the adverse environmental impacts are reversible or irreversible. For example, an impact will be described as low should the impact have little chance of being rectified to correct environmental impacts. On the other hand, an impact such as the nuisance factor caused by noise impacts from wind turbines can be considered to be highly reversible at the end of the project lifespan. The assessment of the reversibility of potential impacts is based on the following terms:

- **High** - impacts on the environment at the end of the operational life cycle are highly reversible;
- Moderate - impacts on the environment at the end of the operational life cycle are reasonably reversible;
- **Low -** impacts on the environment at the end of the operational life cycle are slightly reversible; or
- **Non-reversible** - impacts on the environment at the end of the operational life cycle are not reversible and are consequently permanent.

Irreplaceability - this reviews the extent to which an environmental resource is replaceable or irreplaceable. For example, if the proposed project will be undertaken on land that is already transformed and degraded, this will yield a low irreplaceability score; however, should a proposed development destroy unique wetland systems for example, these may be considered irreplaceable and thus be described as high. The assessment of the degree to which the impact causes irreplaceable loss of resources is based on the following terms:

- High irreplaceability of resources (this is the least favourable assessment for the environment);
- Moderate irreplaceability of resources;

- Low irreplaceability of resources; or
- Resources are replaceable (this is the most favourable assessment for the environment.

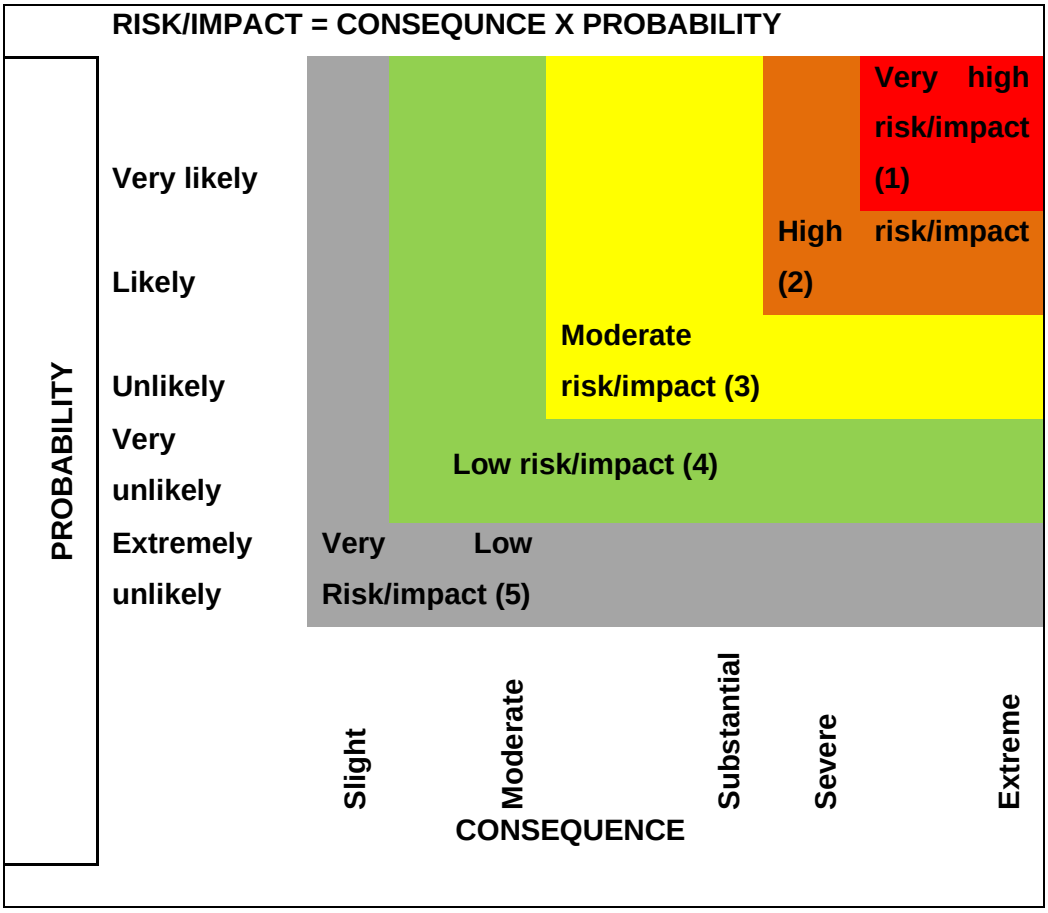


Figure 12: Guide to assessing risk/impact significance as a result of consequence and Probability.

The status of the impacts and degree of confidence with respect to the assessment of the Significance is stated as follows:

Status of the impact: A description as to whether the impact will be:

- Positive (environment overall benefits from impact);
- Negative (environment overall adversely affected); or
- Neutral (environment overall not affected).

Degree of confidence in predictions: The degree of confidence in the predictions, based on the availability of information and specialist knowledge. This should be assessed as:

- High;
- Medium; or
- Low.

Based on the above considerations, the specialist provides an overall evaluation of the significance of the potential impact, which should be described as follows:

- **Low to very low:** the impact may result in minor alterations of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated;
- **Medium:** the impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated; or
- **High:** Where it could have a “no-go” implication for the project unless mitigation or re-design is practically achievable. Furthermore, the following must be considered:
- Impacts should be described both before and after the proposed mitigation and management measures have been implemented.
- All impacts should be evaluated for the construction, operation and decommissioning phases of the project, where relevant.
- The impact evaluation should take into consideration the cumulative effects associated with this and other facilities which are either developed or in the process of being developed in the region, if relevant.

Management Actions:

- Where negative impacts are identified, mitigatory measures will be identified to avoid or reduce negative impacts. Where no mitigatory measures are possible this will be stated.
- Where positive impacts are identified, augmentation measures will be identified to potentially enhance these. Quantifiable standards for measuring and monitoring mitigatory measures and enhancements will be set. This will include a programme for monitoring and reviewing the recommendations to ensure their ongoing effectiveness.

Monitoring:

Specialists should recommend monitoring requirements to assess the effectiveness of mitigation actions, indicating what actions are required, by whom, and the timing and frequency thereof.

Cumulative Impact:

Consideration is given to the extent of any accumulative impact that may occur due to the proposed development. Such impacts are evaluated with an assessment of similar developments already in the environment. Such impacts will be either positive or negative, and will be graded as being of negligible, low, medium or high impact.

Mitigation:

The objective of mitigation is to firstly avoid and minimise impacts where possible and where these cannot be completely avoided, to compensate for the negative impacts of the development on the receiving environment and to maximise re-vegetation and rehabilitation

of disturbed areas. For each impact identified, appropriate mitigation measures to reduce or otherwise avoid the potentially negative impacts are suggested. All impacts are assessed without mitigation and with the mitigation measures as suggested

vii) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.

(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties)

Positive impacts

- Job creation
- Improved investment and growth in local economy
- Improved service delivery and standards of living.

Negative Impacts

- Hazard can be eliminated if compliance to the Environmental Management plan is strictly adhered too. The hazards that must be anticipated are:
- Noise; which is not significant seeing that the proposed site is not in close proximity to residential areas.
- Dust Generation; which is not significant seeing that the proposed site is not in close proximity to residential areas. Dust will also be controlled during a dust management plan as set out in the Environmental Management Plan.
- Haulage trucks. The necessary safety and road signs as well as trained personnel will be available on site.
- Hydrocarbon spillages. All the necessary precaution measures will be taken as clearly set out in the Environmental Management Plan.
- Poor management of topsoil. Topsoil management prior, during and after construction has been clearly described in the Environmental Management Plan. Contractors need to strictly adhere to these mitigation measures.

viii) The possible mitigation measures that could be applied and the level of residual risk.

With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/ discussion of the mitigations or site layout alternatives available

to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).

The following mitigation measures are some of the proposed methods to manage the proposed mining of gravel material from the borrow pit in order to prevent and mitigate potential environmental impacts:

1) **Air Quality:** The project's main potential effect on air quality will be dust emission by loading of gravel. Wet suppression will be employed in the borrow pit area, on haul roads at stockpiles areas. The objective will be to maintain a ***low*** risk of exceeding national standards for PM10 concentrations and rates of dust fall.

2) **Soil, Land Capability and Land Use:** The risk of causing a significant degradation of topsoil quality and associated loss of land capability after rehabilitation will be minimised to a ***low*** level by:

a) Taking care to strip and stockpile topsoil, subsoil and overburden layers selectively and to prevent mixing of especially topsoil with any of the other layers;
b) Backfilling the opencast void with discard material, overburden, subsoil and topsoil, in that order;
c) Analysing the topsoil, fertilising it appropriately and re-vegetating it with local indigenous flora to re-establish the pre-project land use, which was natural veld suitable for grazing.

3) **Ecology:** Successful restoration of the land capability will encourage natural re-colonisation of the rehabilitated area by mammals, birds, reptiles and insects, but it may require re-introduction of some species over time in order to reduce the risk of a low-functioning or unbalanced ecosystem to a ***low*** level.

4) **Visual aspects:** The terrain is quite flat and however since the borrow pit is close to the road it will be visible from the local roads. Judicious placement of topsoil and overburden stockpiles can screen the mine from certain view shed areas, but the stockpiles would also be visually prominent and potentially intrusive, unless they were vegetated to mitigate the visual impact. Diligent application of wet suppression would reduce this risk to a ***low*** level.

5) **Cultural and Heritage aspects:** There are no graves identified on the borrow pit site that will be likely affected by the mining activities. Unless unknown graves are unearthed during mining, the expected impact on cultural and heritage resources is likely to be of ***negligible*** significance;

6) **Socio-economics**: The construction of the road and mining of the gravel material will provide, given the levels of unemployment in the area, the impact is expected to be of ***moderate*** significance.

Other methods to manage the proposed gravel mining activities at the site in order to prevent and mitigate potential environmental impacts:

- Spillages must be cleaned appropriately;
- Implement strict housekeeping measures;
- Store raw materials inside a roofed structure that is not prone to wind-blown dust;
- Make staff aware of potential environmental impacts;
- Waste (general and hazardous) must be correctly managed to prevent nuisance conditions or environmental pollution.
- Develop and implement a waste management plan;
- Appropriate bonding and containment measures will be implemented to prevent contamination of stormwater due to spillages of hazardous substances.
- Restrict the area of impact to as small an area as possible;
- Ensure health and safety of employees during the operation, loading and transportation of gravel material;
- Ensure that dust emissions remain within allowable limits; and
- Prevent soil erosion, contamination and undertake appropriate remedial actions.
- Where possible limit the removal of riparian vegetation.
- The haul roads in the area will be made compact. Both sides of the haul roads will be planted with trees to arrest air borne dust.
- Dust mask/Face mask will be provided to all employees working in the likely dusty areas.
- Proper maintenance of vehicles will be done, which minimize the pollutants.
- Cover and/or maintain appropriate freeboard on truck hauling any lose material that could product dust while travelling.
- Vehicles should be covered by tarpaulin to reduce spillage on roads.
- Regular checking & Maintenance of vehicles, trucks, dumpers etc, will be conducted and pollution under control (PUC) vehicle will be used during transportation.
- Periodically, water will be sprinkled on haul roads to wet the surface.
- Overloading of transport vehicles will be avoided to prevent spillage.
- During the mining activities will be confined to footprint of the mining area applied for.
- To minimize the vehicular pollution from the transporting vehicles, the following conditions are insisted to permit the vehicles of the transporters.

- Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

ix) The outcome of the site selection Matrix. Final site layout Plan

(*Provide a finale site layout plan as informed by the process of consultation with interested as affected parties.*
The project site is the only alternative site that has been investigated. The Farm is currently being used for livestock grazing.

Table 5: showing the selection Matrix

Environmental Consideration	**Site Evaluation Farm**	
	Yes	**No**
Within an unstable area (fault zone, seismic zone, dolomite, sinkholes)		**x**
Within 500m of water resource		**x**
Availability of land	**x**	
Accessibility in terms of road networks	**x**	
The distance to the boundary of the nearest residential area		**1km**
Nodality with respect to market	**x**	

x) Motivating for No alternative on the Development

(*If No alternatives, Including Alternative Location for the activity were investigated, the Motivation for not considering such)*.

No alternative sites were assessed as the preferred site has adequate and good quality material needed for the road construction. Mining of the gravel material will boost the economic development through this proposed project which is near the Austrey Village. This project will provide employment opportunities, thus stimulating development of the communities. The preferred site has the material to construct durable roads.

xi) Statement motivating the preferred site.
(A concluding statement indicating the preferred alternative, including preferred location of the activity')

The preferred site alternative has been identified based on confirmation by Geotechnical results confirming the availability of the adequate good quality material for the road construction. The borrow pit has sufficient gravel material and is also in proximity to the construction site therefore haulage cost will be minimal thus saving the state funds. This preferred site prevents further disturbance of the environment and allows for all development to occur within the same area where other construction of the road is.
In terms of the site layout (offices, roads etc), the parameters taken into account to select the site included:

- Environmental
- Streams and rivers;
- Wetlands;
- Flora, fauna and vegetation;
- Social
- Homesteads;
- Farming;
- Technical
- Topography; and
- Access road.

The potential impacts associated with the proposed development are of medium to low significance and with the implementation of the proposed mitigation measures, these can be significantly reduced to be of low to very low significance. The proposed site and layout are considered suitable provided that all the conditions, mitigation measures and environmental impact regulations are implemented.

i) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity. *(Including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)*

1) Project screening and understanding the baseline environment

In order to identify and fatal environmental or social flaws that the project may encounter, an initial project screening was conducted were all knowledge sources of the area are assessed and analysed. Site visits to determine the possible impacts the proposed project may have, and highlights which impacts need to be studied further. The description of the baseline environmental and socio-economic conditions above provides information on receptors and resources that have been identified as having the potential to be significantly affected by the proposed Project. It also describes baseline conditions that have been used to make the assessment. The description of the baseline is aimed at providing sufficient detail to meet the following objectives:

- To identify the key conditions and sensitivities in areas potentially affected by the proposed Project;
- To provide a basis for extrapolation of the current situation, and development of future scenarios without the proposed Project;
- To provide data to aid the prediction and evaluation of possible impacts of the proposed Project;
- To understand public concerns, perceptions and expectations regarding the proposed Project;
- To allow the proposed Project to develop appropriate mitigation measures; and
- To provide a benchmark to assess future changes and to assess the effectiveness of mitigation measures.

2) Public Participation

The key principle of consultation is to ensure that the views of the public are taken into. The objective is to ensure the assessment is robust, transparent and has considered the full range of issues or perceptions, and to an appropriate level of detail.

3) Assessment of Impacts and Mitigation

Please see **(vi)** for the Impact Assessment Methodology used to identify, assess and rank the potential impacts associated with the development.

The identified risks and impacts for this study, specifically the proposed mining site, were identified in terms of the environmental studies for this site and the socio-economic need of the surrounding area.

Observation for the suitability, viability and quantity of possible mining sand deposits were assessed. Possible mining areas were identified. These were assessed against environmental and cultural impacts and the areas that will affect them were excluded. The possible visual impacts, erosion mitigation and recommendations from specialist studies and the impact assessment process were used to determine 4.4ha area as well as the mining phases and sizes of the mining blocks

ii) An assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.

Please refer to the Methodology (vi)

j) Assessment of each identified potentially significant impact and risk

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties.

NAME OF ACTIVITY	**POTENTIAL IMPACT**	**ASPECTS AFFECTED**	**PHASE**	**SIGNIFICANCE** if not mitigated	**MITIGATION TYPE**	**SIGNIFICANCE** if mitigated
Excavations	Loss of vegetation and Faunal habitat	Flora and fauna	Construction phase	Medium	Remedy through Rehabilitation Plan, Conservation Management Plan and Alien Invasive Management Plan.	Low
	Dust	Natural Environment, road users and nearby residents.	Construction, commissioning, operational Decommissioning and closure	Medium	Reduce drop height of material to a minimum. Area will be mined in phases to reduce the barren areas. Temporarily halt material handling in windy conditions. A speed limit of 30km/hour will be displayed and enforced through a fining system. All vehicle drivers entering the site will be informed of the speed limit.	Low
Stockpiles	Dust	Natural Environment, road users and nearby residents	Construction, commissioning, operational Decommissioning and closure	Medium	Reduce drop height of material to a minimum. Area will be mined in phases to reduce the barren areas. Temporarily halt material handling in windy conditions. A speed limit of 30km/hour will be displayed and enforced through a fining system. All vehicle drivers entering the site will be	Low

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					informed of the speed limit.	
Emissions	Air quality	Natural resources	Construction, commissioning, operational Decommissioning and closure	Medium	Vehicles and machinery on the site will be monitored for excessive emissions. Vehicles and machinery will be maintained to minimize emissions. A log book will be filled in to keep a record of all maintenance problems encountered and mitigation measures implemented to resolve the problem. Vehicles and machinery emitting excessive emissions will be stopped immediately and not allowed to operate until the necessary repairs have been done.	Low
Waste from chemical toilets and litter	Pollution and nuisance	Natural and agricultural resources	Construction, commissioning, operational Decommissioning and closure	Medium	The toilet is serviced when needed and emptied when almost full. If a leak occurs the correct emergency procedure is to be followed. Litter will be removed from site by the operator daily.	Low
Hydrocarbon spill	Surface water contamination and loss of natural and agricultural resources.	Natural and agricultural resources	Construction, commissioning, operational Decommissioning, closure and post-	High	Any mine vehicle which is leaking hydrocarbons (e.g. petrol, diesel or oil) will be serviced in a concreted workshop to repair the leak. Hydrocarbon spillages are to be cleaned up	Low

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
			closure		immediately. The mine will also maintain a store of suitable absorbent material, suitable bioremediation substance and a spill kit. All incidences/ spillages are to be recorded in an incident log book. Contaminated soil must go to a landfill site.	
Fire	There is the potential for fire to occur on the site. Veld fires can occur across the vegetated areas of the property.	Natural and agricultural resources	Construction, commissioning, operational Decommissioning, closure and post-closure	High	All employees will be inducted on fire safety and on how to reduce the probability of a fire spreading out of control. Anyone who observes a fire must report it immediately to the fire protection agency/ fire brigade and their supervisor/ mine manager. Fire breaks will be maintained on the boundary of the mine site. No fires or activities that can start a fire will be allowed on site. Vehicles must be parked in an area with no vegetation if a fire occurs.	
Impact on the naturally occurring fauna present in	No red data fauna species were identified during the survey. The proposed	Natural resources	Construction, commissioning, operational Decommissioning and closure	Medium	Rehabilitate the area after mining process is complete and vegetation will return. Use of topsoil with seeds and roots to rehabilitate the site.	Low

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
the area	development will not impact on any known conservation worthy species.					
Socio-Economic	Job creation	Jobs will be created. Local residents will be employed.	Construction, commissioning, operational Decommissioning and closure	Positive	Local contractors, employing or seeking to employ local (historically disadvantaged individuals (HDIs) from the region who are suitably qualified, should get preference. The municipality, local community and local community organizations should be informed of the project and potential job opportunities by the developer.	Positive
Loading, hauling and transport	Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site.	Socio Economic Impacts	Construction, commissioning, operational Decommissioning and closure	Medium	A speed limit of 30km/hour will be displayed and enforced through a fining system. All vehicle drivers will be informed of the speed limit. Speed limit will be applicable when delivery trucks drive through residential areas Access road will be maintained while mine is in operation and haul road is used.	Low
Excavations, operations,	Socio Economic impacts	Noise due to mining machinery, trucks and people	Construction, commissioning, operational	Medium	No activities that may generate noise levels above the legal limit in terms of the Environmental Conservation Act.	Low

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
loading, hauling and transport		on site	Decommissioning and closure		Machinery and vehicles should be regularly maintained to prevent excessive noise. All machinery and work activities must adhere to the requirements of the noise regulations.	
Gravel material extraction	Impact on the biota and habitat	Environment and Natural Resources Biota	Construction, Operation Decommissioning Phases	Medium	Remedy and Minimize through Rehabilitation Plan, Conservation Management Plan. Monitor and control through Mine Abstraction Plan.	Low
Rehabilitation and restoration of disturbed Areas	Topography and visual alteration.	Topography and visual environment	Decommissioning Phase	Moderate	Remedy through Rehabilitation and Closure Plan.	Low
	Noise generation.	Noise receptors	Decommissioning Phase	Low	Manage through Noise Reduction Measures and Regular Vehicle Inspections.	Very low
	Air quality and dust emissions.	Air quality	Decommissioning Phase	Low	Monitor and manage through Dust Management Plan and Measures.	Very low
	Land capability reduction.	Soils	Decommissioning Phase	Moderate	Manage, minimise through Post-closure Management Plan and Rehabilitation Plan.	Low
	Destruction of vegetation.	Fauna and flora	Decommissioning Phase	Moderate	Manage and Minimise through Management Plan and Rehabilitation Plan.	Low
	Soil contamination.	Soil	Decommissioning Phase	Medium	Monitor and remedy through Emergency Response Plan.	Low

k) Summary of specialist reports.

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form):-

No specialist studies were conducted.

l) Environmental impact statement

(i) Summary of the key findings of the environmental impact assessment;

This Basic Assessment illustrates that there are various potential negative and positive impacts that may arise as a result of the proposed mining of gravel material operations on Austrey Farm No. 403 IN which will have an effect on the following environmental components:

- Terrestrial ecology;
- Air quality;
- Heritage;
- Soils and land capability
- Social environment; and
- Visual aesthetics.

However, no impacts which could cause detrimental harm to the environment were identified as part of this assessment, should the prescribed mitigation measures proposed as part of this report. The proposed borrow-pit or mining operation will be established in an area that has already been visually impacted upon by pervious mining, informal settlements, cattle grazing and farming.

Key findings of the environmental impact assessment include:

- The significance of potential environmental impacts can be reduced to **low - very low** significance with implementation of mitigation measures and monitoring.
- Impacts on the socio-economic environment and livelihoods of the community of can be mitigated from **very low – low** significance.
- Cumulative noise, visual and air quality (dust) impacts are deemed to **not be significant (low)** when proper mitigation measures are implemented.

The project entails the opencast excavation of gravel material from a borrow pit. The area is dominated by grass, the mining procedure will only entail the mechanical excavation of the

gravel material by means of an excavator, after which it will be loaded onto trucks and transported from site.
The No-Go option will result in the site remaining as it is presently, vacant land. The benefits of the project can be divided into social and economic classifications. The mine will provide direct employment to local persons. The operation further creates indirect employment opportunities in equipment, transport and the construction environment.

The objective of Basic Assessment and Environmental management programme, in this case a basic assessment is to find the alternative ways to identify the environmental impact. The assessment and evaluation of potential impacts associated with the proposed development was undertaken in an iterative manner, to inform proactively the 'shaping' of the most favourable development proposal.

The proposed site is considered suitable provided that all the mitigation measures contained in this report are applied.

The construction phase and operational phase have very similar negative impacts. However, the potential impacts identified will be adequately managed and effectively mitigated through the implementation of the recommendations outlined in this report as well as the proposed Environmental Management Programme (EMPr).

Major environmental findings

The following aspects require attention from an environmental management point of view were identified, and are addressed in this document:

Fire

Fire is a real threat thus no open space fires are to be permitted or indeed necessary on site.

Animals

No introduced animals of any kind are permitted on site. Hunting or trapping or interfering with any wildlife is again contractually prohibited. There are holes that indicate of animal habitat on site. No hunting will be allowed.

A monitoring programme will be implemented for the duration of the construction phase of the project. This programme will include:

- ❖ Audits during first month where after monthly audits will be conducted by the Environmental Control Officer, which are according to the EMPr and conditions of the Environmental Authorisation.
- ❖ These audits can be conducted randomly and do not require prior arrangement with the project manager.
- ❖ Compilation of an audit report with a rating of the compliance with the EMP. This report will be submitted to the relevant authorities (DMR).
- ❖ Proper and continuous liaison between developer, the Contractor and other stakeholders and members of the public to ensure all parties are appropriately informed at all times.

The impact will not have an influence on the decision for the mitigation

The magnitude of the impacts is low i.e. natural and social functions and process are not affected or minimally affected. From the significance analysis of the impacts, none have higher impacts. This study therefore reflects that no social, environmental, economic or institutional reasons have been identified by this preliminary investigation as to why the proposed development should not proceed. Assuming compliance with the stipulated mitigation measure the perceived negative impacts of the proposed project will be minimized.

A monitoring programme will be implemented for the duration of the construction phase of the project. This programme will include:

- Audits during first month where after monthly audits will be conducted by the Environmental Control Officer, which are according to the EMPr and conditions of the Environmental Authorisation.
- These audits can be conducted randomly and do not require prior arrangement with the project manager.
- Compilation of an audit report with a rating of the compliance with the EMPr. This report will be submitted to the relevant authorities (DMR).
- Proper and continuous liaison between developer, the Contractor and other stakeholders and members of the public to ensure all parties are appropriately informed at all times.
- The impact will not have an influence on the decision for the mitigation.

(ii) Final Site Map

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers.

No environmental constraints which would prevent the proposed mining associated mining from being authorised have been identified within the proposed development footprint from an environmental sensitivity point.

Refer to map attached Figure 1

(iii)Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;

Positive impacts associated with the project include:

- Job opportunity
- The proposed mine has the potential to contribute to the maintenance of infrastructure in and around the local area.
- Positive contribution to social economic development.
- Contribute to the national GDP.
- Open communication with the I&AP of environmental findings and performance will contribute the learning opportunity of the surrounding communities
- Promote the knowledge and need for the eradication of alien species within the surrounding communities.

Negative Impact associated with the project

- The mining activities will cause noise and dust issues, however this is easily mitigated
- Negative impacts with regards to the biophysical environment include potential contamination of the area due to spillage by hydrocarbon products
- Loss of soil resources
- Change of current land use
- The proposed mine area was used for livestock grazing, loss of grazing land.
- Generation of dust.

m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;

From the findings it is clear that the proposed project of upgrading the roads and the establishing borrow-pit is desirable since the development will contribute positively to the local communities. It is therefore concluded that the proposed project has sufficient merit for its approval. Impacts are localized and mostly associated with proximity to the site, however the overall impacts after implementation of mitigation measures is a medium negative significance. It is believed that the proposed project does not hold a fatal flaw that would restrict the project from taking place. The mitigation measures identified on the above, the development impacts are manageable and the project can be approved. The contractors on site must comply with the general findings and mitigation measures. The impacts are minimum and insignificant. Vegetation will not be tempered with. Dust depressant will be used to reduce dust generated during construction.

Based on the assessment the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion as conditions of authorisation.

The following management objectives are prescribed for the proposed borrow-pit mining operation:

- Restrict the area of impact to as small an area as possible;
- Limit the impact on possible archaeological finds;
- Ensure health and safety of employees;
- Limit the visual impact on sensitive visual receptors;
- Ensure that dust emissions remain within allowable limits; and
- Prevent soil erosion, contamination and undertake appropriate remedial actions.
- Use inert construction waste (e.g. old road surface and foundations) as fill material where possible;
- Re-vegetate and rehabilitate after construction;
- Where possible limit the removal of riparian vegetation.

The following table shows the environmental management objectives that are recommended for the borrow pit gravel mining:

Impact	**Responsibility and Phase**	**Mitigation**
Compliance with	Applicant	All relevant legislation and policy must be consulted

Impact	Responsibility and Phase	Mitigation
relevant environmental legislation and policy		and the proponent must ensure that the project is compliant with such legislation and policy. These should include (but are not restricted to): MPRDA, NWA, NEMA)
Visual intrusion associated with mining activities	Site Manager (operation)	Mining activities should only take place during normal work hours (7am to 5pm). Mining activities must be limited to the designated area and not encroach into surrounding areas.
Demarcation of mining site	Site Manager (Operation)	The boundaries of the mining site must be adequately demarcated to restrict mining and other activities. All plant, equipment and other materials must remain within the demarcated boundaries.
Spillage of hazardous substances	Site Manager (Operation)	All oils, fuel and other maintenance equipment and supplies must be stored in a secure area offsite with a compacted surface. Spill kits must be kept on-site and maintained. All hazardous material must be stored more that 50m away from any water course. Vehicles must be maintained to an acceptable standard to prevent any fuel, oil or lubricant leaks etc).
Dust control	Site manager (Operation)	Only take place during agreed working times and permitting weather conditions to avoid drifting of dust into neighbouring areas. A speed limit of 30km/h must not be exceeded on dirt roads. Any complaints or claims emanating from dust issues must be attended to immediately. During windy periods un-surfaced and un-vegetated areas should be dampened.
Noise	Site manager (Operation)	Movement of heavy machinery should be limited to normal working hours (7 AM to 5 PM). Ensure there is a facility for nearby residents to make complaints. These must be addressed and recorded.
Waste management	Site manager (Operation)	Sufficient waste containers must be available. No waste must be buried or burned on site. Waste must be collected on a regular basis and disposed of at a licensed landfill site.
Final rehabilitation and decommissioning	Decommissioning and Closure	Any remaining gravel stockpiles must be removed or levelled. Site clean-up must be done. Waste material of any description, including receptacles, scrap, rubble and tyres, will be

Impact	Responsibility and Phase	Mitigation
		removed entirely from the mining area and disposed of at a registered landfill site. It will not be permitted to be buried or burned on the site. Mined out areas must be stabilised and profiled (if necessary). The post rehabilitation topography should result in the same slope as prior to mining. Weeds/alien plants growing on site must be manually removed and deposited at a registered landfill site. All equipment and other items used during the mining period must be removed from site. At closure the internal haul road must be left in a good and non-eroded state (as it was prior to mining activities). Rehabilitation must be completed in such a manner that the land can be optimally used post-mining. Final rehabilitation shall be completed within a period specified by the Regional Manager.
Closure	Site Manager (Decommissioning and Closure)	Closure must comply with the MPRDA (Act 28 of 2002), NEMA (Act 107 of 1998) and the NEMA Regulations (2017) requirements for mine closure. The closed site must pose no safety risks. A closure plan must be compiled using the guidelines described in Appendix 5 of the NEMA Regulations (2017) and submitted to DMR. A closure certificate must be obtained from the Minister of Mineral Resources.

n) Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

In order to achieve appropriate environmental management standards and ensure that the findings of the environmental studies are implemented through practical measures, the recommendations from this study are included within an EMPr.

The EMPr must be used to ensure compliance with environmental specifications and management measures. The implementation of the EMPr for the life cycle phases of the

project is considered to be vital in achieving the appropriate environmental management standards as detailed for this project. The proponent is not negated from complying with any other statutory requirements that is applicable to the undertaking of the activity. Relevant key legislation that must be complied with by the proponent includes inter alia:

- Provisions of the National Water Act, 1998 (Act No 36 of 1998);
- Provisions of the National Heritage Resources Act, 1999 (Act No. 25 of 1999).
- Provisions of the National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)
- National Mineral and Petroleum Resources Development Act (Act No 28 of 2002)
- The Constitution of South Africa (No108 of 1996)
- National Environmental Management Air Quality Act (Act No. 39 of 2004, Government Gazette
- National Forests Act (Act 84 of 1998) (NFA)
- The Occupational Health and Safety Act, 1993 (No 85 of 1993)
- The Mine Health and Safety Act, 1996 (No 26 of 1996)

The following aspects are proposed to be included as conditions in the Environmental Authorisation:

- The proponent must appoint a suitably experienced (independent) Environmental Control Officer (ECO) for the construction phase of the development that will have the responsibility to ensure that the mitigation / rehabilitation measures and recommendations are implemented and to ensure compliance with the provisions of the EMPr.
- Vegetation clearing should be restricted to the footprint of the site under construction as far as possible;
- All construction areas should be demarcated prior to construction, to ensure that the footprint of the impacts is limited;
- Movement of construction vehicles and workers is to be restricted from areas outside of the boundaries of the demarcated construction areas;
- The construction staff should be educated about the value of environmental sensitivity;
- Stockpiling of topsoil should be monitored according to the ECO recommendations;
- Should a grave or any other historically significant feature be identified in the construction footprint, the feature may not be removed and a heritage specialist must be contacted immediately;

- Appropriate dust abatement measures must be implemented in areas where required;
- A network of dustfall monitoring units should be installed for monitoring during the construction and operational periods for unpaved roads;
- A spraying programme should be instituted on the construction sites and unpaved roads used by construction vehicles;
- Invasive or exotic plant species should not be allowed to establish during and after the construction phase and
- Avoid leaving any building material or waste on site that could create a visual impact.

o) Description of any assumptions, uncertainties and gaps in knowledge.

(Which relate to the assessment and mitigation measures proposed?)

This BAR has identified the potential environmental impacts associated with the proposed activities. The purpose of this section is therefore to highlight gaps in knowledge when the EIA phase of the project was undertaken. Undertaking the EIA process in parallel with the feasibility study does however have a number of benefits, such as integrating environmental aspects into the layout and design and therefore ultimately encouraging a more environmentally sensitive and sustainable project.

p) Reasoned opinion as to whether the proposed activity should or should not be authorised

From the outcomes of this assessment it is the view of the EAP that a positive environmental authorisation be issued for this project since it will have positive social and economic contribution, It is however acknowledged that there will be impacts on the biophysical environment; conversely with the implementation of the mitigation measures outlined in this report and the EMPr as well as through adequate environmental monitoring and enforcement those impacts can be successfully mitigated.

From the findings it is clear that the proposed project of establishment of a borrow pit is desirable since the development will contribute positively to the local communities. It is therefore concluded that the proposed project has sufficient merit for its approval. Impacts are localized and mostly associated with proximity to the site, however the overall impacts after implementation of mitigation measures is a low negative significance.

It is believed that the proposed project does not hold a fatal flaw that would restrict the project from taking place. The mitigation measures identified on the above, the development impacts are manageable and the project can be approved. The contractors on site must

comply with the general findings and mitigation measures. The impacts are minimum and insignificant. Vegetation will not be tempered with. Dust depressant will be used to reduce dust generated during construction.

i) Reasons why the activity should be authorized or not.

The proposed activity should be authorised by the following facts:

- The area is characterised by high levels of poverty and high unemployment levels. So, it will help to create few job opportunities and to broaden the skills of the local community. The proposed development of road by establishing a borrow-pit will improve the safety of the road, by providing slightly wider lanes that reduce the risk of collisions, surfaced shoulders that allow safer stopping in the case of emergencies and walkways that provide a safe space for pedestrians to move on. Society will benefit from employment opportunities created by this road construction within their area. The promotion of the development will increase better life (access to better roads).
- The project will create a sense of ownership and empowerment for the community to operate and manage their assets and strengthen local government and generate sustainable economic development. The road will be smoother, safer and comfortable to travel in even in rainy seasons. A well-made road could deeply influence the community it serves**.** The Community of on the farms and neighbouring communities and the travellers would not have to us a road that exposed them to health hazards due to the safety of the road.
- The proposed upgrading of the roads would provide benefits to both the local and regional community and through traffic by:
    - Increased road capacity that would improve traffic flow and reduce travel time and traffic congestion
    - Improved safety for all road users including pedestrians
    - Improved storm water runoff and drainage
    - Improved road design
    - Improved level of services throughout the area
    - Improved living standards for road users
    - Convenient access to public transport
    - Upliftment of individual and community spirit
    - Broader economic benefits in the form of increased competitiveness
    - Contribution to the National GDP

• Contribution to the GGP

- Improved road visibility during the night resulting in improved road safety. The rehabilitation will result in preserving the integrity of the structure to ensure safe crossing of the river for vehicles and pedestrians that travel in the area.

Should the proposed mining operation not be authorised to proceed, it is anticipated that there will be no proper road in the province. This would not be feasible option in this case as it suggests that borrow-pit be mined and the road be rehabilitated.

q) Period for which the Environmental Authorisation is required.

The proposed borrow-pit will have a period of approximately five (5) years from the date on which mining commences.

r) Undertaking

Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic assessment report and the Environmental Management Programme report.

The undertaking is provided at the end of the EMPr.

s) Financial Provision

State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation.

The financial provision for the mining operations was determined based on information currently available. An assessment was conducted of all the activities taking place on site that fall within the properties associated to the mining permit application. The closure liability was calculated at **R298 661.00** on 22 October 2020.

i) Explain how the aforesaid amount was derived

The amount was calculated according to the methodology in the Guideline Documents for the Evaluation of the Quantum of Closure Related Financial Provision Provided by a Mine as published by the DMR.

ii) Confirm that this amount can be provided for from operating expenditure.
(Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the Mining work programme, Financial and Technical Competence Report or Prospecting Work Programme as the case may be).

The Project Applicant the Department of Public Works has confirmed that this amount will be provided for.

t) Specific Information required by the competent authority
i) Compliance with the provisions of sections 24(4) (a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998). The EIA report must include the:-

(1) Impact on the socio-economic conditions of any directly affected person.
(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim.)

The proposed mining operation is largely proposed on community owned property administered by the tribal authority. It is however, within the boundary of the Kagisano Molopo Local Municipality.

(2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act. *(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as Appendix 4.4 9.2 and confirm that the applicable mitigation is reflected in 4.4 .3; 4.4 1.6.and 4.4 2.herein).*

The area is close to the road, where the land has already disturbed; therefore, no heritage sites of significance were identified within the proposed development/borrow-pit footprint.

u) Other matters required in terms of sections 24(4) (a) and (b) of the Act.
(The EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if

no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as ***Appendix 5)****.*

Alternatives considered for the proposed infrastructure development is limited to an alternative alignment for the borrow-pit development. (*note: the road is below the threshold limits stipulated in the Regulations and is therefore not included as a listed activity and assessed in this application*).

The reason for this is that the mining permit will be obtained for the sole purpose of mining gravel material as in this report. The mining method to be employed (opencast truck and shovel) was assessed for the mine, and no alternatives were considered as part of that application process. Gravel material from the borrow-pit will be transported by truck and stockpiled on the road to be construct

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1) Environmental management programme.

a) **Details of the EAP,** *(Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required).*

Details of the EAP are included in Part A of this report. CV's are attached in Appendix A.

b) **Description of the Aspects of the Activity** *(Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1)(h) herein as required).*

The aspects of the activity are covered in Part A of this report.

c) **Composite Map**

(Provide a map ***(Attached as an Appendix 3****) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers)*

Please refer to Figure 1.

d) **Description of Impact management objectives including management statements**

i) **Determination of closure objectives.** *(Ensure that the closure objectives are informed by the type of environment described)*
The closure objectives and rehabilitation measures for infrastructure in the existing
EMPR will be used for the proposed infrastructure development associated with the borrow-pit mining operation as well. These include:

- Haul roads: Dependent of future landholder desires. Planned to be ripped and rehabilitated to grasslands.

ii) **Volumes and rate of water use required for the operation.**
Not applicable.

iii) **Has a water use licence has been applied for?**
N/A.

iv) Impacts to be mitigated in their respective phases

Measures to rehabilitate the environment affected by the undertaking of any listed activity

ACTIVITIES	PHASE	SIZE AND SCALE of Disturbance	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Construction of 2 km wide. Haul Road	Construction	4.5 ha	• Dust suppression • Minimisation of vehicle movement • Monitoring of dust fall to determine if measures are effective	• Conduct dust suppression techniques to ensure that applicable standards for PM10 and $PM_{4.4}$ are not exceeded.	• During construction
			• Restrict the disturbed area • Restrict spillage from haulage vehicles • Removal of all utilisable soil and storage of the same • Implement of storm water management measures • Treat contaminated soils	• Meet rehabilitation standards/objectives	• During construction
			• Vegetating soil stockpiles • Control alien invasive plant species	• Meet rehabilitation standards/objectives	• During construction
			• Avoid leaving any building material or waste on site	• Meet rehabilitation standards/objectives	• During construction
			• Report and evaluate any archaeological or heritage features found	• Impact avoided	• During Operation
			• Enforce HSEC management	• Objectives of Social &	• During

ACTIVITIES	PHASE	SIZE AND SCALE of Disturbance	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			measures	Labour Plan	construction
Construction of 7km wide Void Road	Construction	4.5 ha	• Dust suppression • Minimisation of vehicle movement • Monitoring of dust fall to determine if measures are effective	• Conduct dust suppression techniques to ensure that applicable standards for PM_{10} and $PM_{4.4}$ are not exceeded.	• During construction
			• Restrict the disturbed area • Restrict spillage from haulage vehicles • Removal of all utilisable soil and storage of the same • Implement of storm water management measures • Treat contaminated soils	• Meet rehabilitation standards/objectives	• During construction
			• Vegetating soil stockpiles • Control alien invasive plant species	• Meet rehabilitation standards/objectives	• During construction
Clearing of vegetation within Topsoil Stockpile footprint	Construction	$100m^2$	• Dust suppression • Minimisation of vehicle movement • Monitoring of dustfall to determine if measures are effective	• Conduct dust suppression techniques to ensure that applicable standards for PM_{10} and $PM_{4.4}$ are not exceeded.	• During construction
			• Restrict spillage from haulage vehicles • Removal of all utilisable soil and storage of the same	• Meet rehabilitation standards/objectives	• During construction

ACTIVITIES	PHASE	SIZE AND SCALE of Disturbance	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			Implement of storm water management measures • Treat contaminated soils		
			• Vegetating soil stockpiles • Control alien invasive plant species	• Meet rehabilitation standards/objectives	• During construction
			• Avoid leaving any building material or waste on site	• Meet rehabilitation standards/objectives	• During construction
			• Report and evaluate any Archaeological or heritage features found	• Impact avoided	• During construction
			• Enforce HSEC management measures	• Meet objectives of Social & Labour Plan	• During construction
Clearing of vegetation within the footprint of the proposed mini-pit ramps	Construction	0.4 ha	• Dust suppression • Minimisation of vehicle movement • Monitoring of dustfall to determine if measures are effective	• Conduct dust suppression techniques to ensure that applicable standards for PM_{10} and $PM_{4.4}$ are not exceeded.	• During construction
			• Enforce HSEC management measures.	• Meet objectives of Social & Labour Plan	• During construction

e) Impact Management Outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
Construction of a new section Haul Road and Void road	• Dust pollution	• Air quality	Construction	• Control through dust suppression • Control through minimisation of Vehicle movement • Control through monitoring of dust fall to determine if measures are effective	Conduct dust suppression techniques to ensure that applicable standards for PM_{10} and $PM_{4.4}$ are not Exceeded
	• Soil erosion, Compaction and contamination	• Soil		• Prevent through restricting the disturbed area • Prevent through restricting spillage from haulage vehicles. • Control through removal of all utilisable soil and storage of the same. • Control through implementation of storm water management measures • Remedy through treatment of contaminated soils	Rehabilitation standards/objectives
	• Loss of Vegetation • Invasion by alien invasive species	•Vegetation		• Modify by vegetating soil stockpiles • Control though alien invasive eradication programme	Rehabilitation standards/objectives
	• Visual impact	• Visual receptors		• Avoid/prevent leaving any building material or waste on site	Rehabilitation standards/objectives
	• Heritage	•Archaeological or heritage features		• Prevent through reporting and evaluation of any archaeological or heritage features found	Impact avoided
	Social impact	• Noise and visual		• Control through appropriate management measures; • Prevent through HSEC management measures	Objectives of Social & Labour Plan

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
		• Health, safety and security			
Clearing of vegetation within the footprint of the topsoil stockpile and the proposed mini-pit ramps	• Dust pollution	• Air quality	Construction	• Control through dust suppression • Control through minimisation of vehicle movement • Control through monitoring of dustfall to determine if measures are effective	Conduct dust suppression techniques to ensure that applicable standards for PM_{10} and $PM_{4.4}$ are not exceeded
	• Soil erosion, compaction and contamination	• Soil		• Prevent through restricting the disturbed area • Prevent through restricting spillage from haulage vehicles • Control through removal of all utilizable soil and storage of the same • Control through implementation of storm water management measures • Remedy through treatment of contaminated soils	Rehabilitation standards/objectives
	• Loss of vegetation • Invasion by alien invasive species	•Vegetation		• Control through restricting the footprint to be cleared • Control though alien invasive eradication programme	Rehabilitation standards/objectives
	• Visual impact	• Visual receptors		• Avoid/prevent leaving any building material or waste on site	Rehabilitation standards/objectives
	• Heritage	• Archaeological		• Prevent through reporting and evaluation of any archaeological or heritage features found	Impact avoided

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
		or heritage features			
	• Social impact	• Noise and visual • Health, safety and security		• Control through appropriate management measures; • Prevent through HSEC management measures	Objectives of Social & Labour Plan
Hauling and transport of gravel during operations	• Dust pollution	• Air quality	Operational	• Control through dust suppression • Control through minimisation of vehicle movement • Control through monitoring of dustfall to determine if measures are effective	Conduct dust suppression techniques to ensure that applicable standards for PM_{10} and $PM_{4.4}$ are not Exceeded
	• Soil erosion, Compaction and contamination	• Soil		• Prevent through restricting the disturbed area • Prevent through restricting spillage from haulage vehicles • Control through removal of all utilisable soil and storage of the same • Control through implementation of storm water management measures • Remedy through treatment of contaminated soils	Rehabilitation standards/objectives

f) Impact Management Actions

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved).

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
Construction of a new Haul Road	• Dust pollution	• Control through dust suppression • Control through minimisation of vehicle movement • Control through monitoring of dustfall to determine if measures are effective.	Construction	Conduct dust suppression techniques to ensure that applicable standards for PM_{10} and $PM_{4.4}$ are not exceeded
	• Soil erosion, compaction and contamination	• Prevent through restricting the disturbed area • Prevent through restricting spillage from haulage vehicles • Control through removal of all utilisable soil and storage of the same • Control through implementation of storm water management measures • Remedy through treatment of contaminated soils		Rehabilitation standards/objectives
	• Loss of vegetation • Invasion by alien invasive	• Modify by vegetating soil stockpiles • Control though alien invasive eradication programme		Rehabilitation standards/objectives

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
	species			
	• Visual impact	• Avoid/prevent leaving any building material or waste on site		Rehabilitation standards/objectives
	• Heritage	• Prevent through reporting and evaluation of any archaeological or heritage features found		Impact avoided
	• Social impact	• Control through appropriate management measures; • Prevent through HSEC management measures		Objectives of Social & Labour Plan
Clearing of vegetation within the footprint of the topsoil stockpile and the proposed mini-pit ramps	• Dust pollution	• Control through dust suppression • Control through minimisation of vehicle movement • Control through monitoring of dustfall to determine if measures are effective	Construction	Conduct dust suppression techniques to ensure that applicable standards for PM_{10} and $PM_{4.4}$ are not exceeded
	• Soil erosion, compaction and contamination	• Prevent through restricting the disturbed area • Prevent through restricting spillage from haulage vehicles • Control through removal of all utilisable soil and storage of the same • Control through implementation of stormwater management measures • Remedy through treatment of contaminated soils		Rehabilitation standards/objectives

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
	• Loss of vegetation	• Control through restricting the footprint to be cleared	Operation	Rehabilitation standards/objectives
	• Visual impact	• Avoid/prevent leaving any building material or waste on site		Rehabilitation standards/objectives
	• Heritage	• Prevent through reporting and evaluation of any archaeological or heritage features found.		Impact avoided
	• Social impact	• Control through appropriate management measures; • Prevent through HSEC management measures		Objectives of Social & Labour Plan
Hauling and transport of Gravel during operations	• Dust pollution	• Control through dust suppression • Control through minimisation of vehicle movement • Control through monitoring of dustfall to determine if measures are effective	Operation	Rehabilitation standards/objectives
	• Soil erosion, compaction and contamination	• Prevent through restricting the disturbed area • Prevent through restricting spillage from haulage vehicles • Control through removal of all utilisable soil and storage of the same • Control through implementation of storm water management measures • Remedy through treatment of contaminated		Rehabilitation standards/objectives

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		soils		

i) Financial Provision

(1) Determination of the amount of Financial Provision.

(a) Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation.

All the area that will be disturbed by the mining activities will be rehabilitated back to its original state or the satisfaction of the leading authority. Indigenous trees and grasses will be sown in the area as part of the rehabilitation. Department of Public Works and Roads undertakes to rehabilitate all areas impacted on by its prospecting activities to allow the land use to return to livestock grazing.

The closure objectives and rehabilitation measures for the excavation of a borrow-pit on Austrey Farm No. 403 IIN will include the following:

- Haul roads: Dependent of future landholder desires. Planned to be ripped and rehabilitated to bushveld.
- The main closure objective of the contractor's planned mining operation is to restore the site to its current land capability in a sustainable matter.
- To prevent the sterilization of any ore reserves.
- To manage and limit the impact to the surface and groundwater aquifers in such a way that an acceptable water quality and yield can still be obtained, when a closure certificate is issued.
- The prospecting operation also has the objective to establish a stable and self-sustainable vegetation cover in areas affected by the prospecting activities.
- To limit and rehabilitate any erosion features caused by the prospecting activities and prevent any permanent impact to the soil capability thereof.
- To limit and manage the visual impact of the prospecting activities.
- To safeguard the safety and health of humans and animals on the site.
- To close the mining operation efficiently, cost effectively and in accordance with Government Policy.

(b) Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties.

Consultation with the municipality and farm owners and the community was done, no objections were raised. The residents do not have any issue in giving out their land for extraction of gravel material for the construction of the road provided it will be rehabilitated

and royalty a paid to them. The community Members were assured that the site will be rehabilitated, should the contractor leave the site un-rehabilitated the retention paid to DMR will be used for rehabilitation

The current environmental objectives related to closure are contained in the approved EMPr, which was subjected to a public consultation process at the time of compilation. Changes to these objectives in future will again be subjected to public consultation.

(c) Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure.

After all the mining activities are completed, all the stockpile materials will be taken back into the pits. The area will be backfilled and then indigenous trees and grasses will be soon all over the area to avoid erosion and soil removal during rainy seasons. Monitoring of the vegetation will be conducted until the whole area is fully vegetated back to its original state. The seed bank could be enhanced before site clearance by fencing the site off and preventing grazing for as long a period as possible before the start of borrow activities. This would allow for seed production which might be useful for rehabilitation of the site.
During rehabilitation, the topography would be finished off so that the sides of the borrow area are no steeper than 1:5. The slope changes should be finished off so that flowing curves that blend with the surrounding landscape and hill are formed in preference to sharp angles. Unused boulders would be placed back in the deepest areas of the excavated area and the topsoil and vegetation stripped during site clearance would be spread evenly across the borrow pit area. Introduction of seed of species such as *Sporobolus fimbriatus* (drop seed grass) and *Eriocephalus ericoides* (kapokbos) should also be considered. The site will be revegetated as follows:

Re-vegetation

Contractor shall appoint a suitably experienced Landscaping Contractor/Horticulturist who is familiar with the local vegetation. His/her appointment must be approved by the Department. The Landscaping Contractor/Horticulturist shall compile a vegetation rehabilitation plan that shall detail search and rescue, seed collection, seed mixing, seeding methods, planting and vegetation establishment in all borrow pit areas. For very disturbed areas, the soil can be reseeded with a commercially available reseeding mixture. The Contractor shall submit the vegetation rehabilitation plan to the Department for approval.

The vegetation rehabilitation plan shall include the following:

- Seed requirements, harvesting methods and locations, seed storage methods;
- Search and rescue;
- Handling of plant material rescued (translocation areas, propagation, etc.);
- Establishment and maintenance of a project-specific nursery, if required;
- Topsoil, mulch, fertiliser, soil stabiliser and irrigation requirements and application;
- Landscaping and revegetation methods for each area, i.e. hydroseeding / hydromulching, planting, including locations and timing;
- Procurement requirements and a list of species of plants to be procured, if any;
- Vegetation establishment and maintenance requirements (irrigation, etc.) for all revegetated areas; and
- The use of any herbicides, pesticides and other poisonous substances, if required.

The following general recommendations for rehabilitation should be considered by the appointed horticulturist:

- All proposed borrow pit areas should be fenced off to exclude grazing and allow for seed production for as long as possible for the start of borrow activities;
- Stripped topsoil should be evenly spread across disturbed areas after decommissioning;
- Branches rocks or any other coarse organic material should be scattered over the area to create favorable microclimates for seed germination and seedling establishment;
- Reseeding of cleared areas should take place during autumn of spring when temperatures are not too high and the probability for rainfall is high;
- Rehabilitated areas should be protected from grazing for at least 12 to 18 months to allow for proper revegetation;

(d) Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.

Closure happens only when the mining process cease. This is the stage wherein the area will be cleared off any machines, chemical toilets, waste bins to make way for the rehabilitation stage. The main objective of rehabilitation after mining process is to ensure that the disturbed area is back at the state it was before any mining activity.

All the stockpile materials (soil, rocks) will be put back into the open pits. These will be done using the very same front end-loader to push back all stockpiles into the pits. Other foreign soil materials will be brought into the site to ensure that the pits are fully covered. The end-result of the rehabilitation process will be to take the mined area back to its original state/condition before mining. When all the pits are backfilled, indigenous vegetation will be introduced to these sites to stabilise the soil and prevent erosion by wind and water. The main closure objective will be to get the area back to it's before mined state. When the disturbed areas are fully vegetated and soil in the stability state that is when the project is deemed closed.

Closure objectives:

- The main closure objective of the contractor's planned prospecting operation is to restore the site to its current land capability in a sustainable matter.
- To prevent the sterilization of any ore reserves.
- To manage and limit the impact to the surface and groundwater aquifers in such a way that an acceptable water quality and yield can still be obtained, when a closure certificate is issued.
- The prospecting operation also has the objective to establish a stable and self-sustainable vegetation cover in areas affected by the prospecting activities.
- To limit and rehabilitate any erosion features caused by the prospecting activities and prevent any permanent impact to the soil capability thereof.
- To limit and manage the visual impact of the prospecting activities.
- To safeguard the safety and health of humans and animals on the site.
- To close the mining operation efficiently, cost effectively and in accordance with Government Policy.

Rehabilitation Plan:

Infrastructure areas

- On completion of the mining operation, the various surfaces, including the access roads and the borrow-pit will finally be rehabilitated as follows: All other material on the surface will be removed to the original topsoil level. This material will then be backfilled into the open excavations. Any compacted area will then be ripped to a depth of 300mm, where possible, the topsoil or growth medium returned and landscaped.

- All equipment, plant, and other items used during the operational period will be removed from the site. On completion of operations, all buildings, structures or objects on the office site will be dealt with in accordance with Regulation 44 of the Minerals and Petroleum Resources Development Act, 2002, which states: Regulation 44: *1. When a prospecting right, mining right, retention permit or mining permit lapses, is cancelled or is abandoned or when any prospecting or mining operation comes to an end, the holder of such right or permit may not demolish or remove any building, structure or object.*
- The surface will be ripped or ploughed to a depth of at least 300mm, where possible, and the topsoil, previously stored adjacent the site, distributed evenly to its original depth over the whole area. The site will be seeded, should the need arise, with a vegetation seed mix adapted to reflect the local indigenous flora. Any other disturbed areas will be rehabilitated as described under the relevant activities.

Long term stability and safety:

It will be the objective of prospecting management to ensure the long term stability of all rehabilitated areas including the backfilled excavations. This will be done by the monitoring of all areas until a closure certificate has been issued. Final rehabilitation in respect of erosion and dust control self-sustaining vegetation will result in the control of erosion and dust and no further rehabilitation is planned.

Rehabilitation of dangerous excavations

Due to the removal of surface gravel material, excavations will be created that can be classified as dangerous. All available material will be used during backfilling to avoid the existence of dangerous open excavations.

- Final rehabilitation of the borrow pit and roads will be done
- Reports on rehabilitation and monitoring will be submitted to the Department of Mineral Resources -, as described in Regulation 55.
- Maintenance after closure will mainly concern the regular inspection and monitoring and/or completion of the re-vegetation programme. The aim of this Environmental Management Plan is for rehabilitation to be stable and self-sufficient, so that the least possible aftercare is required. The aim with the closure of the prospecting operation will be to create an acceptable post-prospecting environment and land-use.

One of the main aims of any rehabilitated ground will be to obtain a self-sustaining and stable end result. As the open excavations will be backfilled these areas will have long term stability. The closure plan will assist the holder of the licence to achieve the following objectives:

- protect and enhance the reputation of the client as a responsible corporate citizen;
- ensure shareholder value is preserved;
- establish the client management accountability and ownership of closure activity;
- ensure that stakeholders' needs, concerns and aspirations are taken into account when considering closure;
- comply with relevant or applicable legislative requirements;
- ensure the health, safety and welfare of all humans and animals are safeguarded from hazards resulting from mining operations that have been terminated;
- limit or mitigate adverse environmental effects to an extent that it is acceptable by all parties;
- mitigate socio-economic impacts in relation to a particular area in which an operation is located following decommissioning and subsequent closure as far as reasonably possible;
- help protect indigenous values provide a reasonable basis on which the financial consequences of closure can be estimated, recognised and managed including any tax consequences so that mines are closed efficiently and cost effectively;
- avoid or minimise costs and long-term liabilities to the company and to the government and public;
- ensure land is rehabilitated to, as far as is practicable, its natural state, or to a predetermined and agreed standard or land use which conforms with the concept of sustainable development;
- Ensure investment decisions include appropriate consideration of closure, including both quantitative and qualitative impacts of closure.

In terms of the Mine Closure Plans the client requires that planning processes be developed and implemented to ensure that mine disturbance can be satisfactorily rehabilitated and that the residual liability for mine closure is tolerable. Effective planning and final landform design during operations is central to ensuring that cost effective, sustainable objectives can be met. The intent is that the closure phase should be effectively planned, designed, managed and adequately financially provided for. Objectives, strategies and commitments have been identified that meet current stakeholder expectations. The closure plan will be reviewed annually and updated every

three years or as significant changes to the mine plan occur, such as nearing closure (AGES, 2013).

(e) Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline.

The closure liability was calculated at **R298 661. 00.**

Refer to the table below for the Calculated Quantum Rehabilitation Financial Provision.

(f) Confirm that the financial provision will be provided as determined.

The Department of Public Works and Roads has confirmed that the financial provision will be provided as determined.

CALCULATION OF THE QUANTUM

Applicant:	**Department of Public Works, Roads and Transport**	**Ref No.:**	**Ganyesa BP**
Evaluators:	**Lesekha Consulting**	**Date:**	**Mar-20**

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	14,05	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	195,76	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	288,49	1	1	0
3	Rehabilitation of access roads	m2	19	35,03	1	1	665,57
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	340,01	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	185,46	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	391,53	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0,1	205242,16	1	1	20524,216
7	Sealing of shafts adits and inclines	m3	0	105,09	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0,1	136828,1	1	1	13682,81
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	170416,93	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	494971,55	1	1	0
9	Rehabilitation of subsided areas	ha	0	114572,93	1	1	0
10	General surface rehabilitation	ha	1,4	108390,94	1	1	151747,316
11	River diversions	ha	0	108390,94	1	1	0
12	Fencing	m	49	123,64	1	1	6058,36
13	Water management	ha	0	41213,28	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	1,4	14424,65	1	1	20194,51
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
					Sub Total 1		212872,782

1	Preliminary and General	25544,73384	**weighting factor 2** 1	25544,73384
2	Contingencies	21287,2782		21287,2782
			Subtotal 2	259704,79
			VAT (15%)	38955,72
			Grand Total	**298661**

Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including

g) Monitoring of impact management actions

h) Monitoring and reporting frequency

i) Responsible persons

j) Time period for implementing impact management actions

k) Mechanism for monitoring compliance

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Construction of haul Road	Dust generation	PM_{10} monitoring along the eastern and southern portions of the borrow pit boundary. Continuous or once-off measurements	Environmental Specialist	Weekly in the case of once-off samples. Monthly reports. During construction and operational phases
Clearing of vegetation/disturbance of soil	Alien invasive species	Develop alien invasive species monitoring programme, as well as eradication programme	Environmental Specialist	Within existing programmes.

l) Indicate the frequency of the submission of the performance assessment/environmental audit report.

The environmental performance assessment report will be submitted to the DMR every two Years

m) Environmental Awareness Plan

(1) Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work.

Before commencement of any mining on site, all the workers will be inducted, trained and made aware of the environmental risks together with the contents of this EMP. All the employees will sign a contract which binds them with the EMP, ensuring that they all understand the environmental risks of their actions and the consequences thereof.

- An environmental, health and safety induction programme will be provided to all employees prior to commencing work, and they will sign acknowledgement of the induction.

A monthly "toolbox talk" will be held prior to commencing work, which will include discussions on health, safety and environmental considerations. The toolbox talks should be led by the site manager.

(2) Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.

All the risks will be reported to the Environmental Control Officer (ECO) immediately. The ECO will report it to the relevant personnel within 24 hours who are able to control the situation i.e. the spills will be reported to the contractors who deals with spills.

- Establish the context
    - Strategic
    - Organisational
    - Risk management
- Identify risks
- Analyse risks
    - Consequences
    - Likelihood
- Assess and prioritise risks
    - Acceptability

- Priorities for treatment
- Treat risks
- Eliminate
- Reduce
- Transfer
- Manage

Monitor and review. In additional to the above Please refer to the impact assessment.

n) Specific information required by the competent authority

(Among others, confirm that the financial provision will be reviewed annually).

No specific information requirements have been stated by the competent authority to date.

2) UNDERTAKING

The EAP herewith confirms

a) the correctness of the information provided in the reports X

b) the inclusion of comments and inputs from stakeholders and I&APs ; To be included in Final BAR X

c) the inclusion of inputs and recommendations from the specialist reports where relevant; and X

d) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected. Parties are correctly reflected herein. X

Signature of the environmental assessment practitioner:

Lesekha Consulting

Name of company:

Date: 30 October 2020.